The Builder.

No. CLXXI.

SATURDAY, MAY 16, 1846.

AT a meeting of the Institute of Architects, held on Monday evening last, Mr. Tite, Vice-President in the chair, Mr. Scoles, honorary secretary, read a letter from Mr. Myers, dated Rome, contradicting the reports which were current a short time ago, that the dome of St. Peter's was in danger. Some repairs had been made last summer, one or two of the string courses had been restored, and this had probably given rise to the assertion. A contradiction of the report appeared in THE BUILDER immediately after the statement was made.* With reference to the fact that there had long been numerous cracks in the dome, the chairman reminded the meeting of an anecdote, recorded of one of the later architects connected with the cathedral. Some figures had been erected, and the architect, on being asked his opinion of them, said they wanted repose; there was too much flutter in the drapery. "Yes;" replied the sculptor, "there is; it is caused by the wind through the cracks you have made in the dome."

A paper was read by Mr. De Lassaux, on a preparation of plaster of Paris, proposed to be used in England as an improvement on that now sold. In France, plaster is employed extensively for external work, and endures well; whereas that in England will not stand the weather. The buildings in the *Champs Elysées*, erected on lease for forty years, are mainly constructed of plaster. The Circus there, a model in its way, is chiefly of iron and plaster. The English plaster-stone might be called a sulphate of lime; and he considered it was the presence of a small quantity of sulphuric acid in the plaster which prevented its endurance. The plaster, for which he had established a depôt in England, might be used externally, as in France; and, moreover, was very moderate in cost, being 30s. per ton. As a guide, the paper stated, twenty-six pounds of the plaster, costing 4½d., would cover one yard of wall; and thirty-two pounds, cost of which would be 5½d., a yard of ceiling.

Mr. Bellamy said the present cost of plaster in England was 3*l.* 10s. per ton for the coarse, and 4*l.* 5s. for the fine; so that the difference between this and the plaster introduced by Mr. de Lassaux was very great.

The chairman said, that every person who visited France must be surprised at the general use of plaster of Paris for external work. It was a very important material, and he should be glad to see the obstacles to its use in England lessened. It had this great advantage, that whereas other cements and mortar shrink in setting, plaster of Paris expands. This shrinkage of cements rendered pointing undesirable. Smith's ashes, when mixed with the mortar, lessened the shrinking, but did not obviate it. The expansion of work built with plaster of Paris was such, that it was necessary to carry up the party walls detached from the external walls, and with a space between them, as otherwise the latter would be thrust outwards. In France, when plaster was used for external decoration, it was merely necessary that the upper surface should be protected by lead or zinc, and the plaster would last for a long time.

Mr. Poynter thought the English atmosphere would hardly permit the use of it. It was not that there was more rain here than there, but the atmosphere would seem to be more damp altogether. Outside wooden blinds lasted in England only a few years, whereas in France they might be found a century old. The difference of the growth of the vine in the two countries might also be quoted in support of his opinion. It was this dampness, he thought, which rendered the use of plaster externally, inexpedient.

Mr. Bellamy had known the expansion of floors made of plaster force down the enclosing walls.

The chairman remarked, relative to the dampness of our climate, that in Bavaria, Geneva, and other places, they used our block tin where we were obliged to employ lead; the angles of spires were edged with it and glistened in the sun; rain-water pipes were also formed of it. In Canada too, it was successfully used, whereas in England it would speedily become useless. It was clear, therefore, there was some agent in our atmosphere not present in that of the countries named. Whether or not it was sulphuric acid, produced by the combustion of our coals, he could not say.

Allusion having been made to John's cement, Mr. Godwin cautioned those who had not used it, against permitting it to be applied till the ground-work was perfectly dry. He had recently used a very large quantity of it, and although the brickwork had seemed thoroughly dry, a large portion of the cement afterwards fell off, shewing it was not sufficiently so.

The chairman said it was compounded with oil; and, like mastic, was a sort of paint, rather than cement. He had seen mastic thrown off by the cause mentioned by the last speaker. Even when it was put on efficiently in the first instance, the sun and wind, he thought, gradually decomposed the oil, and the cement was blown away. Painting it was a remedy for this. He then alluded to the Portland stone cement, which he considered a good material, if properly made and properly applied. In using this cement, it was important not to mix it a second time; it should never be disturbed. It will harden when mixed a second time, but then it soon afterwards softens and is useless. It was desirable when using new cements, to employ the patentee's own workmen, and to require a guarantee.

Mr. Bellamy said, Portland cement should be applied of uniform thickness, in order that it might look well; he thought it should not be more than three-quarters of an inch in thickness.

The chairman wound up the conversation by remarking, that the cement last named is an imitation of the natural nodules, of which what we call Roman cement is made, consisting of clay and lime. These nodules fall from the cliffs at Harwich, amongst other places, and contain, in addition to clay and lime, a small quantity of iron, which gives it a dark colour. The *chaux hydralique* of the French is precisely similar to this, excepting that it has no iron. Atkinson's cement is the same chemically, but has little iron, and requires no artificial colouring when executed.

ALTHOUGH we do not feel ourselves called upon to correct all the mistakes which may be committed by our trimestral brethren, it is in some degree incumbent upon us not to give greater currency to errors, by transferring them to our pages amongst what is valuable, without calling attention to them as such.

In one of the extracts which we made on the 11th ult., from the current number of the *Quarterly Review*, concerning Spanish architecture, it is stated, that "The *Encyclopædia Britannica* dismissed the architecture of the Peninsula in one fell swoop,"—that being a short paragraph which intimates that the *cinque cento*, or, as the writer of the article in the *Britannica* terms it, "the Italo-Vitruvian architecture" of Spain was mainly influenced by the practice of that style in France and Italy. Now we find, in the *Encyclopædia Britannica*, and in the same article from which the "one fell swoop" is quoted, another not unimportant passage upon Spanish architecture, which will be thought by many to contain the gist, if not the germ, of what the *Quarterly* has expanded into a long article; and certainly the *Quarterly* does but confirm what is therein stated, whilst the truth of the passage quoted from the *Britannica*, as to the influence of the French and Italian schools upon the modern architecture of Spain, that is to say, since the "revival," is singularly justified by many passages, in the course of the further extracts which we have made from the *Quarterly* in continuation of the former. *Exempli gra.* "The first modern building in Spain is the royal palace at Madrid, which was erected for Philip V., by Sachetti, an architect of Turin. It is altogether Italian in its merits and demerits, and as perfectly un-Spanish as are the two summer residences of the Bourbon; that at La Granja being the work of Juvara, a Sicilian,—the other, at Aranjuez, by Bonavia, a Lombard. Philip V. presided at both, and there is no mistake in their ultra-French character."

Moreover, every drawing and every print that comes to hand, shewing a view within any Spanish town, gives conclusive evidence, in the exteriors of the modern churches, of the close affinity which exists between the modern ecclesiastical architecture of Spain and the Borromini style of the cinque cento, whether it be looked for in France or in Italy.

The passage in the *Encyclopædia Britannica*, which the Quarterly Reviewer must have failed to discover before he pronounced that authority as partial and incomplete, is the following—we quote from the separately published treatises in that work, on "Architecture and Building," at page 20:—

"The edifices in Spain of the ages of pointed architecture, are more in accordance with the Moorish than with the European manner, and may, perhaps, be more correctly considered as an off-shoot of the former than of the latter. Though not in the pointed style, the Moorish or Saracenic structures in Spain may be referred to here. They are in a very peculiar manner, which, it would appear, their authors brought with them from the East. Probably it grew out of some of the earlier styles of architecture, as the gothic and pointed did out of the Roman, and was not the result of design. The really distinctive feature of the Saracenic style is the horse-shoe arch, which is the greater segment of an ellipsis, nearly, on a conjugate chord. The columns from which the arches are sprung are slender, and the superincumbent masses are broad and heavy, giving an air of the intermingling of Chinese and Egyptian, both of which this style may be said to assimilate. The enrichments of Saracenic architecture are very much confined to flat surfaces, the walls being sculptured all over with monotonous ornaments, which produce an effect very similar to that produced by

* See p. 76, *ante*.

the hieroglyphics on the flat surfaces of the Egyptian temples, and possibly were derived from them. The most distinguished monument of this style in Spain is the Alhambra at Granada."

Pretty well this, it may be thought, for an Encyclopædia article, which from the largeness of subject and the smallness of space, must indicate rather than develope.

In connection with the subject of erroneous quotation, our attention is recalled to the circumstance, that some years ago the *Quarterly*, in a review of Hope's architecture, misquoted the same article in the *Encyclopædia Britannica*, to the extent of making its author declare, that "the spire is almost unknown on the continent, except in Normandy;" [*Quarterly Review, vol.* 53, *p.* 358.] whereas the passage referred to, which is in the next paragraph to that last above quoted, on Spanish architecture, runs as follows: "The tapering spire is almost unknown in Italy and France, except in Normandy; and in no part of the continent is it so common as it is in this country."

The article in question is written, as all the world knows, by Professor Hosking, and deservedly holds a high place in public estimation.

PROFESSOR WILLIS ON ECCLESIASTICAL ARCHITECTURE.

In his third lecture, on Tuesday, the 5th inst., Prof. Willis entered at some length into the history of the church of the Holy Sepulchre, at Jerusalem, noticing the probable arrangement at various stages in its existence. The original building was raised by Constantine, or, as many have supposed, by the Empress Helena, round what was considered, probably not without reason, to be the actual sepulchre of Christ. The veneration for places, the presumed scenes of important events, was greater amongst the early Christians than amongst the pilgrims, who succeeded them in the Holy Land. Three spots had especial claims upon their attention, the sites of the Nativity, the Holy Sepulchre, and the Ascension. To these, perhaps rightly allocated, succeeded others, and at length all the occurrences mentioned in the New Testament had places assigned to them, whilst the parables themselves were treated as actual events. *Martyriums*, or shrines in honour of the Christian martyrs, united with houses of prayer, were erected, and the building of Constantine was one of these structures. The original edifice, which was described by Eusebius, was dedicated in A.D. 335, and according to the restored plan by the professor, consisted of an inclosure of columns, with apsidal termination at the west, having at the opposite extremity a basilica, similar in plan to those of St. Peter and St. Paul. The sepulchre, itself an excavation, was converted externally into an apparent structure of polygonal form, and surrounded with columns. It stood in the middle of the inclosure which had double porticoes, and an external wall, by which it was protected from general access. Eastward of the basilica were the atrium and vestibule, usually attached to those buildings. This edifice was destroyed by the Persians, and that destruction was the more complete from the enmity between the Christians and the Jews—the latter people joining with the invader. But it was a matter of some difficulty to effect the entire destruction of a building, for unless the materials were removed, the overthrown walls would protect the localities from obliteration, and the foundations would be sought for again, and made use of, with such alterations as resulted from economy, or increased desire of magnificence. Therefore in the buildings, which were raised in succession on the same site, we found that the apsidal termination above-mentioned, was extended to a circle; distinct edifices were placed on the site of the crucifixion, and on the spot where the true cross was discovered, which, the professor shewed, had probably been included within the original building of Constantine. These detached portions, the Crusaders had united in one building, having the plan of a cross church, in the original portions of which we found the Byzantine style, and in the later the style of architecture then prevailing in Europe, varied, as it might be expected to be, by climate, and by the employment of the workmen of the country. The previous round church became the nave of the new edifice, and, perhaps, had had some influence upon the style of Christian architecture; but the later portions had not, because they were in fact built in the style then practised in Europe. The Templars certainly did adopt the circular plan, but other round churches had been built for baptisteries. The curious plan of the building previous to the time of the Crusaders, brought from Jerusalem, and given to a bishop of Iona, was shewn to agree in several important particulars with the building of Constantine, and that altered by the Crusaders: it was remarkable for the curious position and arrangement of its entrances.

The lecture was illustrated by drawings, and a model of the building; and by references to the writings of Eusebius, and the accounts of the pilgrims. The subject was highly interesting, and was treated with much ability by the professor, who was applauded at the conclusion.

DRAWINGS BY PALLADIO.

The following is a description of a collection of architectural drawings, by Andrea Palladio, in the possession of the Duke of Devonshire, at his villa at Chiswick, near London, drawn up (by permission of his grace), by Mr. Poynter and Mr. Donaldson for the Institute of Architects.

These drawings are contained in seventeen portfolios and books of folio size, and bound in Russia or Morocco leather. Those in the portfolios are all mounted, apparently on foreign boards, and many of the sheets, having sketches on both sides, are attached to the boards at one end only, so as to leave the back free for inspection. The drawings have the lines in bistre, and some are shadowed with finely-drawn lines; others with a wash tint.

They are of two classes, either sketches from original monuments or designs, having dimensions and memoranda upon them; or drawings fairly made out, many of which are probably by another hand, as several are purely elementary drawings of the orders, or plans of temples, sepulchres, and other edifices, most likely prepared for publication.

The memoranda are written in a cramped Italian character of the period, with frequent abbreviations and peculiar orthography.

There is not the signature of Palladio on any one of the drawings. Some have the name of the edifice to which they relate, others have no indication of the object they are meant to illustrate. Those, which may be presumed to be by Palladio himself, amount to about two hundred and fifty.

One portfolio contains four drawings of the Baths of Constantine, entitled "Rovine di Constantino." They consist of a plan, elevation, and sections, with dimensions; one portfolio, five drawings of the thermæ of Vespasian; one book, ten drawings of the thermæ of Nero; one portfolio, six drawings of the thermæ of Titus; one portfolio, nine drawings of the thermæ of Diocletian; one ditto, eleven drawings of the thermæ of Antoninus; one ditto, twelve drawings of the thermæ of Agrippa.

These drawings, fifty-seven in number, are evidently the originals from which the Earl of Burlington published the work on the Baths of the Romans, in 1730. The last-mentioned portfolio contains also a neatly drawn bird's-eye view of Rome, dated 1562, before the erection of the present St. Peter's

One portfolio with eighteen drawings, containing a sketch of a cornice attributed to Raphael;—measured plans, elevations, and sections of the amphitheatres at Pola and Verona, and of the Coliseum; plans and sections of ancient theatres, one of which has the Vitruvian diagram inscribed within the outer circumference, instead of being within the Platea.

There is also a remarkable set, consisting of the plan, elevation, and section of a beautiful composition, with dimensions and details, similar in style to the Temple of Fortune at Preneste. The subject consists of a vast theatre on the banks of a river: the theatre is surmounted by a succession of terraces, with porticoes and flights of steps, leading up to a circular temple, having in front an hexastyle Corinthian portico.—One portfolio with sixteen drawings, ten of which illustrate the Temple of Fortune at Preneste, with plans, elevations, and sections, a restored elevation, elaborate measurements, and restorations of parts, with dimensions, shewing some remarkable and interesting details, of which there now are no vestiges at Palestrina. There are also various compositions, apparently studies for the restorations of certain courts and porticoes; and one drawing of an amphitheatre.—One portfolio with twenty-nine drawings of the Temples of Antoninus and Faustina, of the Pantheon, of Venus and Rome, &c., at Rome, of Bacchus in the Campagna, of the temples at Tivoli, on the Clitumnus and at Nismes; of the Forum of Nerva, of the basilica of Constantine at Rome, &c.—One portfolio with twenty-eight drawings of the arches of Janus, Constantine, Septimius Severus, Gallienus, and the Porta Maggiore, at Rome; of the ancient arches at Verona and Susa; elevations of a doorway at Spalatro, and of the doorway in the cloister of St. Giorgio Maggiore at Venice; and an elevation of one of Palladio's palaces at Vicenza.—One portfolio with twenty drawings, consisting of various sketches of plans, &c., from the villa Hadriana near Tivoli; of the Septizonium or Portico of Pompey; of the tomb of Theodoric near Ravenna; and miscellaneous elementary drawings of the orders, &c.

The following relate more immediately and exclusively to Palladio's own edifices and works. One portfolio with thirty-one drawings in all, containing an elevation of the scene of the Teatro Olimpico by Gian. Battista Albanesi, and a section of the Cortile of the Convento della Carità at Venice, not by Palladio. The other drawings consist of the original sketches, with dimensions, of various palaces at Vicenza, as the Chiericati, Tiene, &c., and also of many new compositions of façades, original in conception, and very elegant in style, partaking much of the cinque-cento character.—One portfolio with thirteen drawings, and another with twelve drawings, being studies for plans only of palaces and villas.—One portfolio containing eighteen drawings, one sheet with the translation from Vitruvius of the description of the Egyptian and Corinthian Œci, and sections in illustration of the text; the rest are studies for various churches, one of which is a round church with a projecting portico, like that of San Simeone at Venice.—One portfolio with twenty-one drawings of plans, elevations, sections, and parts of the villas Papa Giulio and Madama near Rome; of the palazzo of the Counts Tiene at Vicenza, and some drawings of the orders as though prepared in outline for an elementary work. There is also one book endorsed with the words "Heathen Temples, plans, fronts and sections," but the drawings apparently are not by Palladio. It contains thirty-three leaves with plans of temples, principally circular, in Rome and the Campagna; one of a church at Constantinople, and a portion of the palace of Diocletian at Spalatro.

There is also a fine large drawing in outline faintly tinted, being the elevation of a magnificent palace three stories high, enriched with columns on each story, and forming an imposing and grand composition. It is framed and glazed, and in excellent preservation.

CHAPEL BUILT BY ONE MAN.

Every stone of the chapel for the Bath Union Workhouse, mentioned in our last, was laid by one man, John Plass, a mason, aged 78, who was residing in the house. The dimensions of the chapel are 67 feet in length, by 35 in width, and it is capable of accommodating 455 persons in the body. At the west end is a gallery, which affords room for 256 children. In the west porch a stone is thus inscribed:—

To record the services of
JOHN PLASS,
inmate of the Workhouse, who, at the age
of 78, working with much zeal and
industry, laid all the stones
of this building.

We are glad to hear that he has been treated liberally by the guardians.

FOREIGN ARCHITECTURAL AND COLLATERAL INTELLIGENCE.

Paris.—Jury of Rewards for Artisans.—The principal manufacturers of the French capital have united, of late, for forming the above association. Its objects, as stated in their prospectus, are: "To prompt the masters to acts of kindness, the workmen to their *duty* and to morality; to establish between master and man a benevolent mutuality; to reward good behaviour, industry and skill, by the way of medals, prizes, and other rewards—indiscriminately given to any working individual—without reference to their creed, age, sex, or kind of occupation. To form an alliance of the industrious *interests*, for explaining the wants and defects of that branch of the social fabric, to find a remedy for them and to check their recurrence; to labour in fine, for the improvement of the physical (sanatory) condition of the working population, through an improvement of their *morals*." A similar organism (says the *Journal des Débats*) exists already in the military and civic branches of the state, where it may be considered as one of their main springs of improvement—and why should the humbler classes not enjoy the same privilege? A great many manufacturers, engineers, architects, carpenters, casters, &c., &c., have already subscribed for this important institution, and it is to hoped that it will spread over the whole of France.—[Fas est—immo ab *amico* discere.]

The Manufactory of Gobelins at Paris.—This establishment has been known for two centuries for its textures, and especially their splendid colours—which, by some, were ascribed to the sort of water used in the works. Very extensive structures of amelioration are to be executed on the banks of the *Bièvre*, near Paris, which is the little river passing the Gobelins.

The Archæological Commission of St. Petersburg.—This *official* body, supported by the state, was established in 1832—of which, however, we can merely give a cursory notice, as it is chiefly history which has hitherto engrossed its attention. The MSS. of the Vatican relating to Russian affairs have been carefully searched, and copies procured by the labour of Mr. de Uwarow, the ambassador. The collection of Russian *medals*, the first in Europe, has been elucidated in an especial work of the Russian Archæologists.

Debates in the French Chambers on the "Marks" to be placed on manufactured Goods.—As we said before, the French Chambers are very active this year about matters connected with trades, manufactures, &c. The following is an abstract of the reasoning of the Paris press: "It is a wrong calculation, a faulty logic—to *respect* the abuse, which dishonest persons would make in the name of liberty. The freedom of commerce, this proud trophy of 1789, does not come at all to be curtailed; and it is difficult to make sensible persons believe, that liberty of trade is endangered by preventing a scoundrel from selling chalk for plaster of Paris, or copper for gold. If government, or rather the *Chambers of Commerce*, will cover with their guarantee the genuine article, confidence in our manufactures will result therefrom all over the world. The plan proposed is only an extension of what exists already in printing, jewelry, &c. Every person will be, as before, at liberty to make and manufacture what he likes—only the consumer would then *know* whether he does not buy an *X* for an *U*."

Outbreaks and Strikes amongst the Working Men in France.—The French periodicals are full of reports on this avowed *self-aid* of the labouring population. "*We*, certainly, have to learn yet (from history), that any such taking the law into their own hands has ever done them any good."—*Journal des Débats.*

Novel mode of "working" a Patent on the Continent.—It appears, that some parties there do not at times choose to take out a patent, especially in cases where its working would entail large expense (risk?) of manufactories, &c. They advertise the main features of the discovery—and put a certain price (say fifty dollars, or even two dollars) on the written or printed communication of the secret. It is stipulated, however, that the buyer should not be at liberty of allowing others to use it.

Futurity.—It is to be hoped that the time will come, when every 20,000 people, either in the aggregate or gregariously, will have not only their hall, select library, and reading-room, but also their public walk, play, and gymnastic-grounds. In the olden times of Athens, there was an especial fund set aside, which could not be applied excepting to afford the people healthful and invigorating amusement.

Debates of the House of Lords at Munich on Technical Schools.—This important subject has taken up the time of the Chamber for two days—and the necessity of architectural instruction for the humbler walks of *builders* has been well put forth. One of the secretaries of state said beautifully, "The whole position of the present time, the direction which the culture of the age has taken, shew that it is especially the *industrial* tendency, at which the moral and material forces of men are aiming, while classical studies have lost their character of isolation. The barrier between *humanitarian* and *material* efforts is every day more vanishing—the men of industry direct their views at higher culture of the mind, while the *statesman* can no longer exist, if deficient in material, and even technical knowledge. If a technical school were to be established in every county, the expense would be great—but the blessing still *greater*." The project was adopted by a great majority.

Technical and Art-improvements of Western Africa.—Since France possesses establishments on the coast of Guinea, young men have been sent (at the expense of the state) to France to be instructed in several branches of arts and sciences; and seven young chiefs of Bassam and Gabon are now at Paris. Six young men have been sent from Senegal to be instructed in the smelting and casting of iron and other metals, in which their country seems to abound.

Statue in honour of Herder.—The honour done by Germany to such men as Schiller, Jean Paul Frederic Richter, Goethe, &c., has induced some friends of the above great man to propose the erection of a monument at Weimar. As he has served *mankind*, England ought to take a share in doing his memory honour.

Monumental Show-garden at Pistoja.—No one who comes to Tuscany, will fail to view the above splendid establishment, belonging to the liberal and philanthropic Cavaliere Niccolo Puccini. The idea of erecting monuments to *great* men amongst the *great* scenery of nature is novel—at least for us moderns. The inscriptions of a reasonably liberal tendency are by the knight himself. A work, entitled *Monumenti del Giardino Puccini*, with thirty-seven plates, gives a true representation of these monumental gardens.

Artisans in Algeria.—The war secretary at Paris has lately decided, that a free passage to that colony should be given to masons, carpenters, stone-cutters, tilers, &c., being such trades as (besides agriculturists) are the most important to a new establishment. The number of emigrants from France, Italy, and Germany is considerable.

Great Constructions in Germany.—The building of the new Picture Gallery at Dresden has been approved of by both houses of the legislature, and Professor *Semper* appointed the architect, of whose work on Protestant churches we gave a short account to our readers.—As Berlin has been hitherto destitute of any striking church structure, H.M. the King of Prussia has given orders, that a vast cathedral should be raised in the very centre of the city. It will consist of a huge nave, surmounted by two steeples, each 300 feet high.

Hydraulic Works in Upper Egypt.—Mr. d'Arnoux, late pupil of the Polytechnic School of Paris, and engineer to the Pasha of Egypt, has obtained from H.R.H. the important commission of draining the lands of Upper Egypt.

J. L——y.

PUBLIC NECESSARIES AND URINALS.

The necessity for public conveniences daily becomes more evident and more pressing, and yet no steps are taken to provide them. The nature of the subject, probably, prevents our contemporaries from joining us in the demand for proper provision in this respect. It is greatly to be wished they would put aside their feelings of delicacy, in a matter of so much importance to all, and assist in enforcing a remedy for a monstrous evil.

CHURCH BUILDING:

SUGGESTIONS AND INSTRUCTIONS FROM THE INCORPORATED CHURCH BUILDING SOCIETY.

Several provincial correspondents having inquired of, us the conditions that must be attended to, in preparing drawings for churches, in aid of which the incorporated and other societies are to be applied to, we think it desirable to print the following:—

The general committee meet for the dispatch of business on the third Monday in each month, with the exception of August, September, and October.

All applications for assistance, plans, certificates of completion, &c. to be post-paid, and delivered at the society's office before the first Monday in each month, to be examined by the surveyor, and afterwards by the sub-committee, whose meeting is held on the Tuesday preceding that of the general committee.

The following plans, &c. must, in every case, accompany an application for aid from this society towards building an additional church or chapel:—

1. A plan of the building, shewing the proposed fitting up, with schedules of the number and situation both of the appropriated and of the free seats. Also, if there be any gallery, a plan of the gallery floor.

2. Elevations of the several fronts.

3. Longitudinal sections, shewing, respectively, the north and south sides of the interior, unless the two sides are similar, in which case one longitudinal section will be sufficient. Also transverse sections, shewing the east and west ends of the interior.

All the above to be drawn to a scale of one-eighth of an inch to a foot. The thickness of the walls and of any projections, buttresses, &c., and the heights of the different parts of the building, to be carefully and accurately figured on the respective drawings. The depth of the foundations, and the spread of the footings, to be correctly described by the sections, and also figured.

4. A drawing, shewing the construction of the roof or roofs, drawn to a scale of half an inch to the foot, with the scantlings of the different timbers figured, and provision shewn for the proper ventilation of the roof.

5. A drawing, shewing the construction of the galleries, if any, on the scale of half an inch to the foot, the scantlings being also figured.

6. A block plan of the site, on the scale of not less than one-twelfth of an inch to a foot, shewing the site, the approaches, the cardinal points, and the drains; with a sectional line drawn across the churchyard; and with the deviations from the level, if any, measured.

7. A description of the nature of the site, as to the soil and fitness for foundations; stating the distance of the nearest building, and whether there are any buildings which will obstruct the light.

8. A detailed specification of the works, stating all dimensions, and

9. A detailed estimate of the expense.

If any enlargement of an existing church or chapel be contemplated, the following are required:—

1. A plan of the whole existing church or chapel, with the dimensions figured, shewing the present arrangement and intended addition; with schedules of the number and situation of the appropriated, as well as of the free seats, present and proposed.

2. An elevation of each front affected by the proposed alteration.

3. Sections of such parts of the building as are affected by the proposed alteration.

4. Longitudinal and transverse sections of the additional building.

All the above to be drawn to the scale of one-eighth of an inch to the foot, and the dimensions figured in each plan or drawing. Pen and ink drawing only is required.

5. Where new or enlarged roofs are required, a drawing, shewing the construction of the roof or roofs, drawn to a scale of half an inch to a foot, with the scantlings of the different timbers figured, and provision shewn for proper ventilation.

6. A drawing, shewing the construction of the galleries, if any, on the scale of half an inch to the foot, the scantlings being also figured.

7. A detailed specification of the works, stating all dimensions, and

8. A detailed estimate of the expense.

N.B. All plans must be approved by the society before the work is commenced.

In order to prevent as much as possible the delay which frequently arises from the necessity of returning plans for alteration, or for further information, persons applying for aid from this society are desired to attend as strictly as possible to the following suggestions and instructions:—

1. *Site.*—Central, with regard to the population to be provided for; dry; if possible, rather elevated, but not on a high or steep hill; not near nuisances, such as steam-engines, shafts of mines, noisy trades, or offensive manufactories: accessible by foot and carriage-ways, but not so near to principal thoroughfares, as to subject the service of the church to the danger of being incommoded by noise. The building to stand east and west as nearly as possible.

2. *Style and Form.*—No style seems more generally suitable for an English church than the Gothic of our own country, as developed in its successive periods. The Norman (or Romanesque) style is also suitable, and offers peculiar advantages under certain circumstances, especially when the material is brick. The society earnestly recommend that, in the proportions and great features, as well as in the details, good ancient examples should be closely followed. For Gothic churches, the best form is either the cross, consisting of a nave, transepts and chancel, or the double rectangle, composed of a nave, with or without side aisles, and of a chancel. In a chapel, the single rectangle is also suitable; the length being at least twice as great as the breadth. If the funds do not suffice to complete satisfactorily a design, otherwise eligible; or if the circumstances of the neighbourhood render it probable that, at no great distance of time, the building may be enlarged; it is better to leave a part of the original design, as, for example, side aisles or transepts, or the tower, to a future period, than to attempt the completion of the whole design at once in an inferior manner. In such a case, the temporary walls and fillings up of arches should be so built, as clearly to shew that they are temporary, and that the building is incomplete, but at the same time not without due regard to ecclesiastical propriety.

3. *Foundation.*—To be surrounded, if requisite, by good covered drains. If the soil wants firmness, the walls may often be better secured from partial settlements, by spreading the footing on each side, than by deepening the foundation, or resorting to more expensive works. In all irregular or doubtful soils, concrete is recommended for the foundations, in preference to any other material. No interment should be permitted under a church, except in arched vaults properly constructed at the time of building the church, with entrances from the outside only; nor should any graves be made within twenty feet of the external *wall*.

4. *Area.*—It would tend much to the preservation of churches, and render them more dry, if a paved open area, not less than eighteen inches wide, were made round them, and sunk six or eight inches below the level of the ground about the church, with a drain from the area to carry off the water.—Or the same objects might be attained either by turning a segmental arch from the wall outside the footing, or by bedding in the wall a course of slate in cement.

5. *Basement.*—The inequalities of the ground, the dampness of the soil, &c., often render it desirable to have crypts under a church. They should be of a massive construction, turned upon semicircular or segmental arches, resembling the early examples, entered only from without.

6. *Floor.*—To sittings, wood; to open spaces, or chancel, stone or encaustic tiles. If not undervaulted, it may be freed from damp by brick rubble, flints, ashes, or furnace slack, laid to the depth of twelve or eighteen inches under the floor. Allowance should also be made for the future rise of the surrounding burial-ground; the floors of many churches, originally above ground, are at this day many feet below the surface, and have thereby become damp and unwholesome. It is desirable that the church floor should be raised at least three steps above the ground line. The distance between the joists of the floor should never exceed twelve inches. All wood floors should be supported on walls, with a clear space of eighteen inches in depth, well ventilated beneath. No American timber to be used either in the floors or in any other part of the building. Flagged floors should be laid on cross walls eighteeen inches high.

7. *Walls.*—To be solidly constructed of stone, either squarred, or rubble, or flint;—or of brick, where no good stone can be procured without great additional expense. If the walls are of brick, cased with stone or flint, the stone or flint to be well bonded into the brick. As a general rule, the thickness must not be less than as follows:—

	Square stone of the best quality or brick.	Brick, faced with flint or stone.	Inferior stone, flint, or rubble.
If less than twenty feet high, and carrying a roof not exceeding twenty feet span	ft. in. 1 10½	ft. in. 2 0	ft. in. 2 3
If twenty feet or more high, or carrying a roof exceeding twenty feet span	2 3	2 5	2 6
If more than thirty feet high	2 7½	2 9	3 0

The above dimensions are given on the supposition that there are buttresses, of solidity and form suitable to the style adopted, placed opposite the trusses or principals of the roof; where there are no buttresses, the thickness of the walls must be considerably greater. No cement or plastering of any kind to be used as a facing of the walls, or of any external part of a church or chapel. If a wall be built with two faces of stone, filled between with rubble, great care must be taken that they be properly bonded together, as the wall will otherwise not stand a partial settlement. Where good stone is scarce, a thickness, otherwise perhaps unattainable, may be secured by this method of construction. Walls built of flint or rubble should have bonding courses of stone or brick, and stone or brick piers at intervals, approaching at least within four inches of the external face. Whatever be the material of which the substance of the walls is made, the dressings should, if possible, be invariably of stone. The greatest attention should be paid to the quality of the mortar used.

8. *Roof.*—The best external covering is lead, which should be not less than seven pounds to the foot;—or copper of not less than twenty-two ounces to the foot. Blue tiles, commonly called Newcastle tiles, or stone tiles, are perhaps the next best covering. Westmoreland slates are better in colour than those commonly used, but are, in most cases, expensive. All slates to be fixed with copper nails. Flat ceilings are inconsistent with Gothic architecture. Next to a stone vaulted roof none has so good an effect internally as an open roof, exhibiting the timbers. It is desirable that this should be of high pitch, the transverse section forming or approaching to the figure of an equilateral triangle. If a wooden panelled roof be preferred, the panelling should not be made to imitate stone. In roofs of low pitch and wide span, horizontal tie-beams are necessary; but in other cases, where the society is satisfied that due provision has been made for the safety of the construction without them, they may be dispensed with. If the distance between the trusses exceed ten feet, intermediate trusses must be introduced. The distance between the common rafters should never exceed twelve inches. Wherever the ends of timbers are lodged in the walls, they should rest in cast-iron shoes or on stone corbels.

9. *Windows.*—In Gothic churches, where stained glass is not used, the glass should be in small panes, those of a diamond shape being generally preferable. Hopper casements are recommended, and they should be inserted in almost all the windows, in order to secure due ventilation. Where lead-lights are adopted, copper bands to tie them to the saddle bars are preferable to lead, being less liable to stretch and become loose by the action of the wind. The very unsightly appearance often occasioned by the wet streaming down the window-backs can be prevented by fixing a small copper gutter at the bottom of each lead-light, to receive the moisture produced by condensation, with copper tubes to convey the same to the outside of the building. This has also a tendency to keep the building dry, and to preserve it from decay; or the inside of the sills may be raised an inch and a half. A good effect will be produced by keeping the sills of windows raised as much as practicable above the line of the tops of the seats.

10. *Tower and Spire.*—The usual place of the tower, in a church without transepts, is at the west end; or it may be placed about the middle of the side. If funds are scanty, it is better to leave this part of the church to a future period, than to attempt its immediate completion in an inferior manner. When the tower contains more bells than one, the timbers of the bell framing or floor should not be inserted into the main walls; but should be supported either on set-offs or on corbels.

11. *Gutters.*—Where necessary, to be most carefully constructed to carry off the rain and snow into the perpendicular pipes, which are best of cast-iron, cylindrical, and placed an inch or two at least from the wall, so as to admit air and keep it dry. Dripping eaves projecting very far do not in all cases supersede the necessity of gutters and pipes, even in very sheltered situations; but in exposed places, eaves-gutters, and rain-water pipes will be absolutely necessary to prevent the wet being driven against the walls, and thus rendering the building damp. Eaves gutters may be made of cast-iron; but, unless very skilfully cast, they will not preserve their level. The lead for gutters must not be less than eight pounds to the foot. Lead gutters must not be less than twelve inches wide in the narrowest part, with drips at proper intervals; each drip two inches deep at the least, and the fall between the drips not less than one inch and a half in every ten feet. Outlets to be provided in parapets to carry off the overflowing occasioned by rapid thaws or otherwise. Drains on the roof should be protected by coverings, as it prevents the melting snow from congealing in the gutter, and thus obstructing the water-course. Drains should be formed at the feet of all the rain water pipes.

12. *Ventilation.*—Ventilation cannot be always completely effected by windows alone, without incommoding the congregation. In such cases foul air may be expelled at or near the roof, either by horizontal or perpendicular channels or tubes. Where there is a ceiling, apertures should be made in it for the proper ventilation of the roof. All the original provisions for the ventilation of the building must be carefully looked after, and the apertures kept open.

13. *Chimneys.*—If any be required, the utmost care must be taken to render them safe from fire. They should never be brought within eighteen inches of any timber. They should be as unobtrusive as possible, but not disguised under the form of any ornamental feature of the building.

14. *The Lord's Table.*—Should be raised two or more steps above the floor of the chancel, which should itself be raised a step or two above the floor of the nave. Where the rails do not extend across the chancel, no seats should be allowed between the rails and the north and south walls; and as much room as possible should be left about the rails for the access of communicants.

15. *Font.*—To be fixed at the west end of the building, or as near as convenient to the principal entrance, but not so as to be under a gallery. Care to be taken that sufficient space is allowed for the sponsors to kneel. The font to be of stone, as directed by the canon, and large enough to admit of the immersion of infants. To be provided with a water-drain.

16. *Reading Pew and Pulpit.*—The reading pew should not be so elevated as to resemble a second pulpit; and both reading pew and pulpit should be so placed as to intercept the view of the east end as little as possible from the body of the church.

17. *Seats.*—The seats must be so placed as that no part of the congregation may turn their backs upon the altar. There must invariably be an open central passage up the whole length of the church, from west to east. No square, or round, or double pews can be allowed, and as few pews as may be. Much accommodation is gained by the adoption, instead of pews, of open seats with backs. The distance from the back of one seat to that of the next must depend in great measure on the height of the backs and the arrangements for kneeling. Where the funds and space admit, convenience will be consulted by adopting a clear width of three feet, or even three feet four inches; but the width of two feet six inches in the clear

may be allowed if the back of the seat be not more than two feet eight inches in height. This height is in all cases to be preferred, both for convenience and for appearance. If a greater height be adopted, the distance from back to back must not be less than two feet eleven inches in the clear. There should not be any projecting capping on the top of the backs. Means for kneeling must in all cases be provided. Hassocks are to be preferred to kneeling boards, especially where the space is narrow. Twenty inches in length must be allowed for each adult, and fourteen for a child. Seats intended exclusively for children may be twenty-four inches from back to front.

18. *Galleries.*—None can be permitted in any part of the chancel. Where necessary, they should not enclose the columns against which they rest, so as to break the upright lines of the shafts from the floor to the roof. Wherever placed, they should, as much as possible, be made to appear as adjuncts and appendages to the architectural design of the interior, rather than as essential parts or features of it. The society will not sanction any plan involving the erection of a gallery, unless in cases where it is distinctly shewn that no room is unnecessarily sacrificed, by inconvenient arrangements, on the floor.

19. *Vestry.*—The vestry should have access to it from without.

20. *Finishings.*—Wall wainscoting, or wood linings to walls, to be avoided wherever convenient. Wood linings to walls confine the damp, and frequently occasion dry rot. For the same reason, cement skirtings are to be preferred to wood; particularly on the ground floor. Where the linings to the walls are of wood, holes should be perforated under the seats to allow the circulation of air. As it is scarcely possible to prevent rot if any wood is in contact with the walls, the ends of seats next the walls should be omitted, and cement, painted, be substituted.

21. *Exciseable and Customable Articles.*—Architects are particularly desired to take care that an accurate account be kept of the quantities of customable and exciseable articles used, where the expense of enlarging, building, rebuilding, or increasing the accommodation of a church or chapel will amount to 400*l.*, or upwards, such as may be duly certified or verified by affidavit.

SHAPE OF SEWERS.

TRAPPING GULLIES—SMALL DRAINS.

Sir,—Allow me through the medium of your widely-circulated journal to invite the especial attention of the Commissioners of Sewers for Westminster, and part of Middlesex, to the report lately published at Brussels, respecting an explosion in a main sewer at Ixelles, occasioned by the improper method of trapping gullies, such method not allowing the gas to escape sufficiently quick in cases of the gas mains being defective, and which is very likely to occur in London, the pipes being laid and jointed in a very slovenly manner. It appears the plan of trapping is similar to the one adopted in the Holborn and Finsbury Commission, and has been recommended by the present surveyor to be generally introduced in the Westminster division. The presumed advantages to be derived from trapping gullies and private drains in the upper district, will, I am persuaded, be more than counterbalanced by the danger likely to be incurred in the lower parts of Pall Mall, Westminster, and other densely populated and valuable portions of this commission. I also wish them to observe minutely the increased height the back-water rises in parts of the King's Scholars' Pond Sewer, since the contraction of the lower part next outlet, and the increased velocity of water discharged from the egg-shaped sewers. Should a storm happen during the time the gates are closed at high water, the destruction of property will be enormous.

Pall Mall, 6th April, 1846.

April 25th.—Allow me now to call your attention to the accident which happened to one of the inspectors (Mr. H. Webber), of the Westminster division, last Wednesday, in a sewer in Rochester-row, and which fully bears out the view I took respecting the system of trapping, and decreasing the size and ventilation of sewers in this district.

By the hasty and general adoption of small egg-shaped sewers, in the poorer and densely populated localities, we shall have, for the present, a cheap and apparently good drainage, but which will not require many years to prove destructive to further improvements of the neighbourhood, without a very great outlay of capital, and a source of immense expense and inconvenience to the public.

April 27th.—The heavy rain, which fell on Saturday night and Sunday morning, has produced a second evil noticed in my letter of the 6th, as likely to occur. The back-water filled the King's Scholars' Pond main sewer, and forced its way up the collateral sewers, carrying away the brickwork back of two houses in Tachbrook-street, next to Warwick-street, Vauxhall Bridge-road, reaching within 9 inches of the basement window sills. It has also done immense mischief in other parts of the neighbourhood, and to the houses in Vauxhall Bridge-road. In justice to all parties, I shall feel obliged by your inserting the three letters with their respective dates.

I am, Sir, &c. Cloacina.

*** As to the increased height of back-water in parts of the King's Scholars' Pond Sewer, "since the contraction of the lower part next the outlet," we learn that no such contraction has taken place. A *very high flood* occurred on Sunday, the 26th ult., and little or no damage took place, except through a neglect of parties themselves, in the case alluded to in Cloacina's letter of 27th ult.

Cloacina states that the back water filled the main sewer, forced its way up the collateral sewers, carrying away the *brick-work back of two houses*, &c. We understand that in consequence of the drains into the main line of King's Scholar pond sewer not having a flap, part of a garden wall was damaged by the rising water, but hear of nothing more.

As to the accident to Mr. H. Webber, the fact is, the sewer was new; not a drain, or gully, nor any soil had been in it. Mr. Webber did not take the Davy lamp, but went with an open candle to examine the brick-work, and the defect in the main of gas, and Mr. Webber's want of caution, occasioned the lamentable accident to himself.

INSTITUTION OF CIVIL ENGINEERS.

May 6th, 1846.—Sir John Rennie, president, in the chair. The paper read was "A descriptive account of the recent works designed by Mr. W. Cubitt, V.P., for the improvement of the River Severn," by E. Leader Williams, resident engineer. The paper commenced by giving an account of the previous condition of the river Severn between Stourport and Gloucester, which it described as being a succession of deep and nearly quiescent pools, separated by a series of rocks and shoals, forming comparative rapids. In these new works, the remedy adopted was the removal of these fourteen natural dams, and the substitution of four artificial weirs, placed diagonally across the channel of the river. In connection with these weirs were a series of locks placed in artificial lateral channels, by means of which the navigation was maintained. These weirs and locks were described as situated at Lincomb, Holt, Bevere, and Diglis; Lincomb being one mile below Stourport, Diglis one mile below Worcester, and Holt and Bevere at intermediate distances. The general dimensions of all the locks resembled that at Lincomb, which was 100 feet long by 20 feet wide, and 17 feet 9 inches deep, with a lift of 8 feet, and a depth of 6 feet 6 inches over the cills. It is built of stone and brickwork upon a foundation of red sandstone rock. The water was admitted to and discharged from the lock chamber in a peculiar manner. A lateral arched culvert was built parallel to the side walls of the lock. It communicated with the bottom of the chamber by seven lateral arched openings at right angles to the culvert, and by it 16,000 cubic feet of water flowed in or out of the lock in one minute and a half; and loaded vessels have frequently passed through in three minutes. The construction of all the locks was described as similar to that at Lincomb.

The lock gates were described as being 33 feet 6 inches in height by 17 feet 6 inches wide. The overhanging portions of the balance beams are of cast-iron, and although the total weight of each gate was 16 tons, it was worked by one man. Diagonal iron tie rods were inserted in the framing of the gates from the top of the heel post to the mitre post, at an angle of 45°, and by this arrangement the gates were rendered perfectly firm. The weirs, which are chiefly built across the bed of the river, but in one instance in an artificial channel, were fully described; they are constructed of large rubble stone, abutting against a foundation of piling, and vary in length between 300 and 400 feet.

The facility with which the freshes are discharged by these weirs was accounted for by their length, their obliquity, and the uninterrupted action of the under current. The advantage of their length was self-evident; and to obtain that, it was necessary to carry the line of the upper sill obliquely across the stream, by which an equal discharge was ensured throughout the whole length of the weir. The free action of the under current was also maintainnd to be an important cause of an efficient discharge of the land waters.

It was found that the under current was improved by the obliquity of the weirs, and less impediment was offered to the water than by weirs placed at right angles to the stream. In fact, if the area of the section represented by multiplying the length of the oblique weir into the depth of the sheet of water flowing over it, was equal to the area of the direct transverse section of the water of the river above it, the weir offered no impediment to the water, and the stream flowed onwards with a regular velocity.

As a proof of this under current, it was stated, that an old barge which had been laid up as useless, got adrift, and sunk in ten feet of water twenty yards above one of the weirs. It continued undisturbed during the short water season, but the first heavy fresh raised it from the bottom, and laid it on the upper cill of the weir, there not being sufficient water to carry it over. Another instance of the free action of the under current was, that the channel not only maintained its original depth, but was scoured out in some instances to a depth of two feet. A series of experiments made in connection with these works, proved that the under current flowed in lines parallel to the surface of the river till it reached the foot of the weir. As an illustration of this fact, a float, which was loaded in such a manner as to swim at different depths, approached the weir in a line parallel to the surface, until it came nearly close to the upper cill of the weir, when it rose, and formed a parabolic curve in its passage over it.

The fall at low water between Stourport and Worcester, was stated to be at the rate of 21 inches per mile; while between Worcester and Gloucester, it was only at the rate of 4¼ inches per mile. On account of this variation, a different mode of improvement was there adopted, viz., removing the shoals by dredging, and constructing a series of embankments for the purpose of equalising the width and depth of the river. The whole series of locks and weirs between Stourport and Gloucester was completed by Messrs. Grissell and Peto, the contractors, in the short space of fifteen months. The works have been satisfactorily tested by the floods of two winters, and the efficiency of the weirs in discharging the flood waters has been fully demonstrated.

At the monthly ballot for members, the following candidates were elected:—Messrs. A. Causton, W. W. Collins, S. Frost, C. Harratt, T. M. Gladstone, and J. Tully.

Building Societies.—A Correspondent directs attention to the fact that the Board of Special Commissioners, Somerset House, London, have decided in the case "Caigill *v.* the Trustees of the Borough of Durham Building Society," that such societies are liable to the payment of 7*d.* on every 20*s.* of interest paid to the societies by the respective members, who have purchased out their shares, notwithstanding any rule or condition made by such society to the contrary.

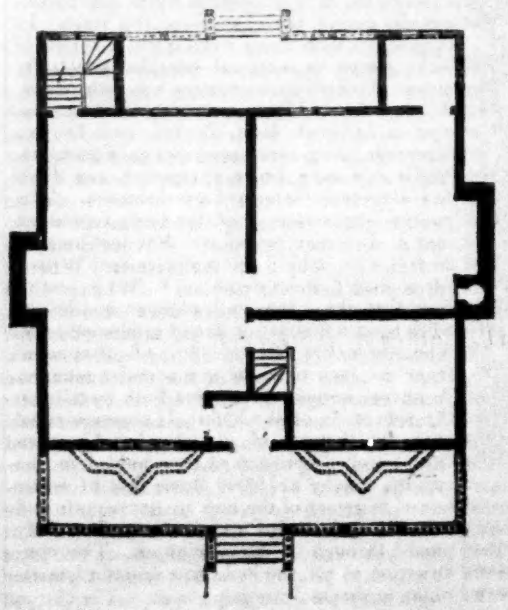
Hull Cemetery Competition.—A correspondent informs us, that the premiums in this competition have been awarded to Mr. C. Broderick, of Hull, and to Mr. E. W. Elmslie, of London.

Water for Liverpool.—A Bill for supplying Liverpool with water is now before the House of Commons.

AN OLD LONDON HOUSE.

LONDON HOUSE OF THE REIGN OF ELIZABETH.

FREQUENT allusions have been made in this journal to the curious volume of MS. drawings by John Thorpe, now preserved in Sir John Soane's museum. Thorpe was an architect extensively employed during the reigns of Elizabeth, James I., and Charles I. He rebuilt Holland House as it now stands, and was the architect of the great Lord Burleigh. The MS. volume contains 280 pages, all filled with plans and elevations, details, copies from French works of architecture, designs, &c. Many of the plans are of important buildings, such as Theobalds, Burghley, Longford Castle, and of some of those he was employed by the government to survey and report upon. There are plans and elevations of country houses and town houses, and some very curious sketches of wooden buildings. Most of the elevations are badly drawn, and in some cases it requires a good acquaintance with Thorpe's drawing to understand them. As an example of what this curious volume contains, one of the sketches is here given:—it represents a wooden building, and it is described as standing at the "water end of Holborn,"—at that time adorned with the mansion of the Lord Chancellor Hatton—who employed Thorpe as his architect for Kirby, in Northamptonshire, still standing.



The plan of the building, which is half the size of Thorpe's sketch, is very interesting; and certainly it gives us very respectable ideas as to the comfortable requirements in his dwelling of the old London citizen or merchant—such person we may very safely suppose to have been the tenant of the building represented. From the garden you ascend by five steps the inclosed terrace in front of the building; this has, as Thorpe expresses, a "terrace overhead"—a small porch leads into the great hall. The kitchen is on the right: the larder is the small square room leading out of it. The small room in front, on the same side as the kitchen, is the buttery, with cellar under, the small steps conducting down to it. Above the hall is "the great chamber," the staircase leading to which opens into a gallery communicating to the rooms of the rest of the building. The square compartments at the back of the house, represented in plan as staircase and larder, are carried up above the roof as turrets; a small prospect tower is placed in the front of the building.

There are several other plans of wooden houses in this curious volume, on a much larger scale than the one represented. The writer was permitted in 1837, by the trustees of Sir John Soane's Museum, to take copies of the collection, an undertaking which occupied him six weeks. Several of the best of the elevations and plans have been given by him in his publications.

C. J. RICHARDSON.

ARCADE—CHAPTER ROOM CANTERBURY CATHEDRAL.

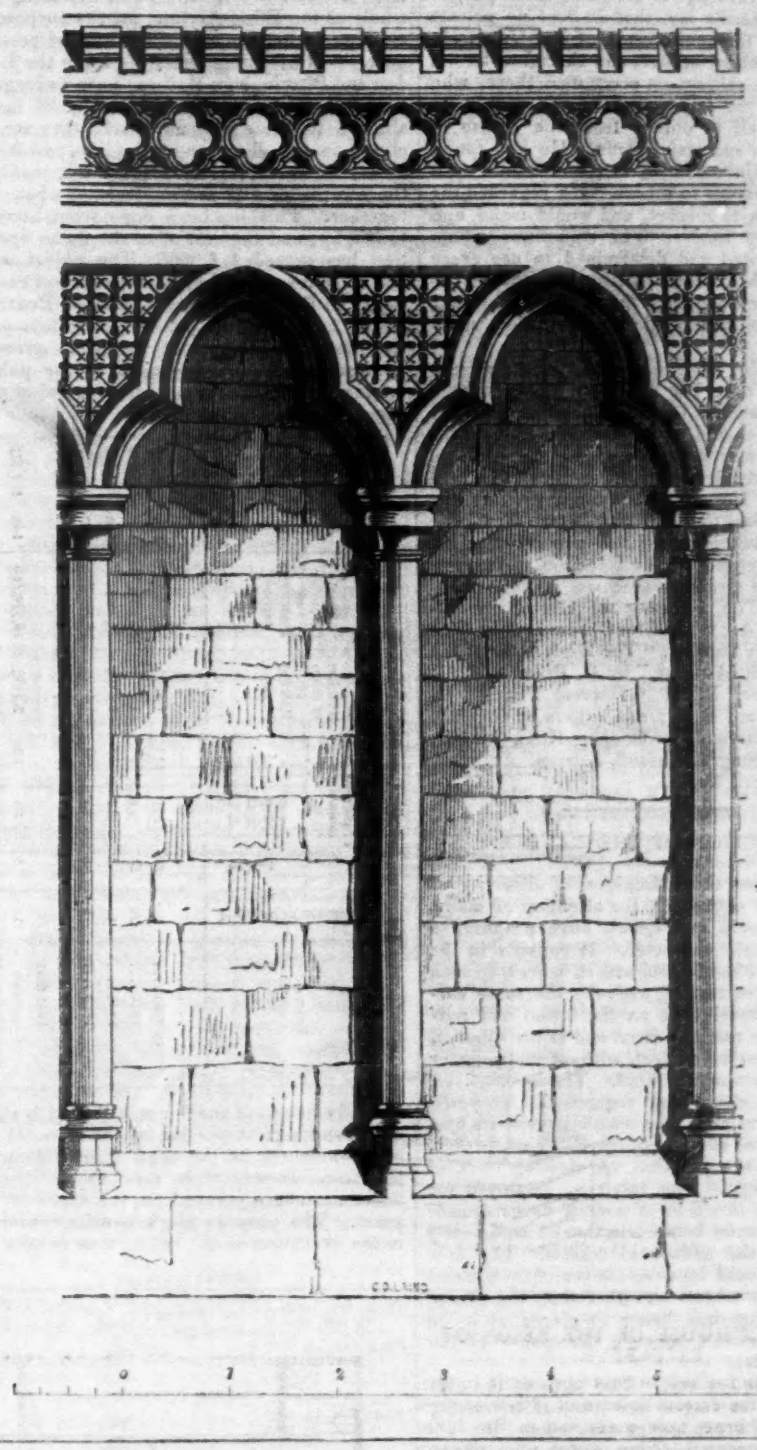
The entrance to this splendid room is from the east cloister. The oldest part is said to be of the time of Archbishop Boniface about 1260, but it was repaired in 1304, and again in the 15th century, when the upper part was rebuilt; the vaulted ceiling, which is remarkably fine, is said to be of Irish oak.

The room is entirely surrounded by an arcade, a portion of which is shewn in the engraving; the arches at the east end intended for the prior and other superior officers, are of a more elaborate but not so good a design; the shafts of the columns are said to be of Bethersden marble; the date of this work (with the exception of the quatrefoils and battlement, which are modern), is about 1270.

It may be as well to add the internal dimensions of the chapter room—length 99 feet, breadth 35 feet, height 52 feet.

W. Caveler.

ARCADE: CANTERBURY CATHEDRAL.



THE ART-UNION QUESTION.

At the anniversary dinner of the Artists' Benevolent Fund, on Saturday, May 9th, at the Freemasons' Tavern, most ably presided over by the Right Hon. Lord Morpeth, M.P., Mr. Benjamin Bond Cabbell, in replying to the toast, "The British Institution," insisted with much force on the importance of leading public attention to the works of modern artists, and urged with truth, the greater value of the Art-Union of London in this respect. The noble chairman, Lord Morpeth, who had previously made a most eloquent address in favour of the fund, then rose and said, the toast next on the list related to the association, so warmly eulogised by Mr. Cabbell, and he was quite sure would be received by the meeting with enthusiasm. The importance of spreading abroad a taste for art must be admitted by all, and the extent to which the Art-Union was effecting this was extraordinary. During his stay in America he was often gratified in a high degree by discovering some of their prints hung up in log-huts, and humble cabins in wild and remote districts. He proposed to drink "Prosperity to the Art-Union of London," and would connect with it the name of one of the honorary secretaries, who was present. The toast was received with loud and continued applause.

Mr. Godwin said, the manner in which the toast had been responded to, would be not merely gratifying to the committee of the Art-Union of London, but valuable to them in their present efforts to ensure the continuance of the association. Most of the gentlemen there were aware of the present position of the Society; that in spite of the admission of the principle on two occasions by the House of Commons, and the recommendation of a select committee of their body, the Chancellor of the Exchequer had declared his intention of opposing the bill to legalize Art-Unions permanently, brought in by Mr. Wyse. He (the speaker), had formed one of a deputation headed by the Duke of Cambridge and Lord Monteagle, who had an interview with Sir Robert Peel and the Chancellor of the Exchequer a few days ago; on which occasion the premier admitted he had not been able to read the report of the committee, but stated that his impression was, that Art-Unions did not benefit high art. Without going fully into the details of the interview, he would mention that the Chancellor of the Exchequer on that occasiom made an observation to this effect, that if the Government allowed this bill to pass, other bodies would apply to be exempted from the Lottery Acts in like manner, the upholsterers for example, and that he did not see why the persons who produced pictures, should obtain immunities any more than the persons who produced tables and chairs. Now he (the speaker) would make no comment on this statement, which was repeated in various forms, because what he would say might be considered disrespectful—but he ventured to think in that assembly at all events, the difference between the producers of pictures and the producers of works of art—the influence of art,—the importance of obtaining for it national encouragement—would be viewed somewhat differently. To oppose the Art-Union of London because the prize-holders bought other pictures than those by the first men in the profession (whose works, by the way, were not bought simply because they were seldom for sale), was preposterous: as well might a recruiting serjeant say he would enlist none but veterans. Whence came the veterans? Why from the recruits. Whence proceeded first-rate painters? Why from the ranks of those who were once second-rate. The majority of those young artists who were striding on rapidly, to fill the spaces which time necessarily made in the first ranks, had been encouraged in their efforts by the Art-Union of London. Of the advantage it had been to individual artists he could mention fifty cases, but would restrict himself to one. At the time of the first Government competition of cartoons, a young artist requested he would come and see his cartoon, and said if it had not been for the sale of one or two little pictures to prizeholders, he could not possibly have attempted this large work. The cartoon was not rewarded, but as he (the speaker) had lately heard, it led to the artist's appointment as master of the Glasgow School of Design, where he was then pursuing his avocation, with advantage to himself and credit to the country. He would not dwell, however, on this point. The immediate encouragement of artists was not the primary object of those who established the Art-Union; what they aimed at was to spread a love of art throughout the community, and to place within the reach of all, the enjoyment of fine works. They knew perfectly well, that this was the true way to advance the interests of artists and of arts; and the results had perfectly justified their views. The great scope of art was beginning to be understood; pictures and sculpture had been looked at and purchased as plate or jewels might be; the fact, that art was a teacher, that a true artist was a poet, expressing his ideas through a different medium, had not been understood. But the time was not far distant, he hoped, when it would be; provided the operations of this and similar societies were not interfered with. Look at the present exhibition; one so good was not remembered. Look at the present state of public feeling as regarded art; when had art been so much talked of and so much thought of too, as it was now? This really was a most important question. The 90,000*l.* the Art-Union of Lon-

don had spent amongst artists was not the main point to be considered; nor even the extraordinary fact that the existence of Art-Unions involved an expenditure amongst artists of at least forty or fifty thousand pounds a year. The great point was, the spread of a love and knowledge of art amongst the people. He need hardly say, that he had no private interest in the continuance of Art-Unions,—his was a labour of love, and therefore he felt justified in calling on every man there, who really felt the importance of the matter, to exert himself to obtain from the House of Commons a successful issue. He had found his chief enjoyments in art, and would open those enjoyments to others. He regarded the true artist with respect, and would make him respected by others. The committee whom he represented had determined to use every means in their power to ensure a continuance of the association, and he doubted not that with the good help of those present, they would succeed.

The noble chairman said, that although until that time his attention had not been specially directed to the proceedings of the society, he should unquestionably support the Bill. We may state, that nearly the whole of the Royal Academicians have signed the petition to the House of Commons, praying the House to pass the Bill now before them.

The prizeholders of the present year are actively engaged in the selection. Amongst the pictures already purchased may be mentioned, "The Fainting of Hero," by Elmore, A.R.A.; "The Gow Chrom and the Glee Maiden," by Lauder; "The High Altar of the Church of St. Antoine," by D. Roberts, R.A.; two by Lee, R.A.; "Harvest Time," by Witherington, R.A.; and others by Goodall, J. Allen, Barraud, A. Cooper, R.A., McIan, F. R. Pickersgill, Hassell, Jutsum, Anthony, De Wint, &c., &c.

JUNCTION OF THE GAUGES.

To obviate the difficulties of diversity of gauge, now occupying the attention of many, Messrs. Austin and Quick have proposed a plan of simple character. It consists in the application of additional sets of wheels to each axle of the carriages, whereby the same carriage may travel both on the broad and narrow gauges, and pass from one to the other, if the statement be correct, without stoppage or inconvenience of any kind. The locomotives, of course, would not require the proposed alteration, as each line would possess its own establishment of engines, travelling no further, as is now the practice, on meeting lines of uniform gauge. The carriages employed for the purpose would be of narrow gauge dimensions, the axles being lengthened sufficiently to receive the additional wheels. The axle bearings would be most conveniently situated between the wheels on either side, the grease or lubricating box being so placed as to be readily accessible between the spokes of the outer wheels.

The inventors say, "The steps of the narrow gauge carriages now project invariably beyond the broad gauge dimensions, the additional wheels, therefore, involve no alteration whatever of bridges, tunnels, or even the station platforms of the narrow gauge lines. The only alteration required, throughout the works, for the uninterrupted passage of these carriages, will be a most simple addition to the rails, at the crossings from one line to the other, or the sidings of both gauges, to allow the flanges of the wheels that are not travelling on the rails to pass through. This will consist of an opening made along each rail to be passed, at the proper distance from, and parallel to the rails travelled upon in each direction, this opening being precisely similar to what is now formed at all crossings to allow the flange of each of the wheels to pass at the crossing points; the turntables requiring only an additional square notch or opening across the rails for each additional wheel."

A model is to be seen at Greenwich, but we have not yet found an opportunity to inspect it.

THE IRON TRADE.—A fall in price was expected but has not come. It appears likely that the present prices will be maintained for some time, should no extraordinary event occur.

RAILWAY JOTTINGS.

A RUMOUR prevails, that the Grand Junction Company are about to possess themselves of the whole of the land from Lime-street to Hotham-street, and from London-road to Lord Nelson-street, Liverpool, including the whole of the Blind Asylum, for the purpose of erecting an hotel upon it for railway passengers.——The young quicksets along the London and Birmingham Railway have undergone a new method of training. Instead of being allowed to grow perpendicularly, they are inclined in the direction of the line, and interlaced, so as to resemble the device made by the swords of the morris-dancers when put together. This has been done from London to Rugby; and the cost of so simple an operation has exceeded 5,000*l*. The object is to make the fence a full protection against cattle. —— The Railway Department of the Board of Trade have recently put forth the following statement of the number of "accidents attended with personal injury or danger to the public, arising from causes beyond the control of passengers," &c.;—

Years.	Number of accidents.	Number of persons injured. Killed.	Injured, not fatally.	Total.	Number of miles of Railway open.	Total Number of Passengers carried.	Proportion of the number of persons injured to the total number of passengers carried.
Last 5 months of 1840	28	22	131	153	1,330¾	6,020,866	1 in 39,410
1841	29	24	72	96	1,356¾	20,449,734	1 in 213,018
1842	10	5	14	19	1,737¾	21,238,445	1 in 1,118,128
1843	5	3	3	6	1,798¾	25,578,693	1 in 4,262,097
1844	24	10	74	84	1,912¾	30,303,052	1 in 336,702
1845 first 6 months..	15	3	30	32	2,111¾	16,730,550	1 in 522,517

——The length of the Summit Tunnel is three miles, and a great portion of the material has been wound out of the earth from a depth of 600 feet. Nearly eight millions of tons of water have been pumped in the space of five years. The quantity of gunpowder consumed in the execution of the tunnel is as follows:—

EASTERN CONTRACT.

		bris.	tns.	cwt.	qr.	lb.
From Jan. 1839 to Feb. 1843	sinking shafts and driving the drifts ..	1182½	54	11	2	27
From Feb. 14, 1843 to Nov. 18, 1845	.....	1102	49	4	0	0

WESTERN CONTRACT.

From Feb. 14, 1843 to Nov. 18, 1844	.....	1200½	53	18	2	10
	Total	3485	157	14	1	9

——The cost of the valuable report on the gauges was 571*l*. 10s.——The only difference between Hallette's Atmospheric Railway, now in operation at Peckham, and the common atmospheric, consists in the construction of the longitudinal valve, which closes the long slit in the atmospheric pipe. In Messrs. Clegg and Samuda's system the opening is closed by a leather valve and hinge. In Mr. Hallette's system the slit is closed by a pair of elastic lips, which allow a thin plate of metal to pass along between them and close immediately after it. These lips are formed of India-rubber pipes, clothed with cotton and leather, and inflated with compressed air of some five pounds pressure.

BATHS AND WASHHOUSES FOR THE POOR.—The London Committee for promoting the establishment of baths and washhouses, have petitioned Parliament to pass a law, empowering boroughs and towns to establish such, and to impose moderate rates to defray any excess of expenditure over income.

LLANDILO CHURCH COMPETITION.

IN reply to several inquirers, we are glad to be able to insert the following letter:—

Sir,—Having observed in your paper, and otherwise learnt, that some of the architects who have transmitted plans to the Llandilo Church Committee, are desirous to know when a selection will be made, I beg to inform you, from your having already noticed this subject in your paper, that the committee are in communication with the Incorporated Church Building Society, whose advice they have sought to enable them to award the prizes in accordance with the stipulated instructions to the architects, and that the Committee will announce their decision as soon as they shall have obtained competent professional assistance for their guidance. The names of the competing architects were forwarded to the committee, under seal, in which state they will remain until the prizes have been determined, when the plans will be returned to the persons to whom they may appear to belong; and in the mean time care will be taken that no improper use is made of them.

I trouble you with this communication, and also beg to inclose a copy of the instructions before mentioned, in order that you may notice the subject, if necessary, in reply to any inquiries which have been addressed to you.

I am Sir, &c., T. W. PUGH,
Chairman of the Committee.

Llandilo, 11th May, 1846.

ARCHITECTS' REMUNERATION.

SIR,—Pardon me for once more trespassing upon your valuable time and attention, but as your correspondent "Alpha," seems not to have kept to the question at issue, viz., "Remuneration of Architects," or, in other words, that they have no specified charges, perhaps you will bear with me for a few moments. Were the solicitor to be consulted, or the medical man called in, both parties have their publicly acknowledged charges, and would receive them without a demur; but not so the architect, and as a case in point, I beg to refer your correspondent to the late case (in the Court of Queen's Bench) of "Mair *v.* Ward," which is so fully commented on in the leading articles of your journal of Dec. 20th and Feb. 7th. After the council for the plaintiff had stated the case, and called witnesses to prove the usages of the profession as regards remuneration—what was the defendant's idea of the matter? why this, "that he supposed the compensation in all departments of it, was to be nothing but what his own judgment should approve, and his 'generosity' bestow." Now here is no "thrower of a sprat to catch a herring," but one who was professionally employed to assign and carry out certain works, which he did to the satisfaction of the employer, and yet the remuneration he was to receive for his services, was to be left entirely to the *generosity* of the defendant. Is this right or proper? The above is no solitary instance; the defendant only expressed the feelings of the majority, and I feel assured that there are but few, if any, in the profession, who have not one time or another, been treated in the same manner as Mr. Mair, although it was not brought into a court of justice; and matters, I fear, will never be otherwise while things remain as they are. I would say now as I did before,—let there be a regular and generally acknowledged set of charges: this is no case to be settled by common law. The profession must legislate for itself, and none else, and should there be any appeal, let it be to a committee of those eminent in the profession, and who can alone judge of the merits of the case. That there are professional tyros who do as your correspondent describes, it is but too true; nevertheless this in a certain extent, arises from the cause which I have above described, and from which many more evils emanate.

Alpha's illustration in proof of his argument is so far so good; but I will put it to him as an honest man, is it just that any party after they have induced an architect to go to the expense of furnishing plans and drawings, should retain them, and that the first intimation he receives, that he is the non-successful candidate, should be through the columns of a public journal? In common politeness (putting aside the justice of the case), they ought as early as possible after the selection has been

made, to return the drawings to their different owners, with the issue of the competition, but I am aware that the reverse is an every-day occurrence. This in itself is bad and quite enough to damp the beginner. Even if he is over generous of his time and talents, he ought not to be victimized; hoping for something better buoys him up through many difficulties, and God help him or any one else when that forsakes him. With many apologies for this long letter, I am, Sir, &c.

May 2, 1846. W. S.

FEES RECEIVED UNDER THE METROPOLITAN BUILDINGS ACT.

On Tuesday, a return of the monies received by the registrar and others under the Buildings Act was issued. We avail ourselves of the following abstract in the *Times*:—

"The first branch of the return has reference to moneys received and expended by the Woods and Forests Commissioners, on account of the salaries of the official referees, and Registrar of Metropolitan Buildings, from September 1, 1844, to the 1st of April, 1846. The contributions received out of the consolidated fund, towards defraying one moiety of the salaries of the official referees and registrar, was 2,650*l.*, out of which 146*l.* 18s. 4d. was deducted for clerks, &c. The contributions in the same period, out of the rates of the city of London, and the counties of Middlesex, Surrey, and Kent, were 1,500*l.*, making together, 3,863*l.* 1s. 8d. On the credit side there were payments, to the official referees and registrar, at 1,000*l.* a year each, of 3,483*l.* 14s. 9d., and on the 1st of April last there was due on the accounts to the same parties, 1,258*l.* 4s. 3d., which is now made payable by the statute passed in the present sessions, out of the consolidated fund. A statement is made, in the second part, of the fees received and payments made by Mr. Symonds, the registrar, from the 1st of September, 1844, to the 1st of January, 1845. The fees received were 265*l.* 13s., which, with 146*l.* 18s. 4d. received through the office of Woods and Forests by payment of the Treasury on account of salaries, made 412*l.* 11s. 4d. The money was disbursed, as per statement on the other side, with a sum of 5*l.* 13s. 0½d. carried to the next account, making 418*l.* 4s. 4½d. The third account in the return is a statement of fees and payments from the first of January, 1845, to the 1st of April last (five quarters). The amount received in that period was 1,958*l.* 4s. 9d., which was disbursed in payments, except a balance in hand of 64*l.* 18s. In the five quarters, as much as 53*l.* 11s. 10d. was paid for postages. The amount due to the 1st of April on salaries and expense, was 351*l.* 1s. 9d., and the amount owing to the office was 211*l.* 2s. 11d.

DUTY ON BRICKS.

Sir,—I saw by your observations that you intended to look to the duty on bricks; but while the grass is growing the steed is starving. Now or never; and considering you are in earnest, I am willing to attempt assistance. Can any one account how it is, that while the producing price of every other manufacture has, in the last 100 years, been lessened more than one-fourth, that the price of brickwork has been doubled instead of lessened? The price of brickwork, when the old Building Act was passed, 14 Geo. 3, as stated in that Act, was 7*l.* 15s. per rod; this was the full price: the same ratio of price for the same kind of work is now 15*l.* per rod. How is this vast difference to be accounted for in any other way than by attributing it to the duty on bricks? And ought we not also to deduct at least one-fifth from the smaller cost (to meet improvements prevented by the duty, for why should not the producing price of this manufacture have lessened like all others?) thus making the natural cost of brickwork of the present day to be about six guineas per rod. We know it is an every day fact, that journeymen bricklayers take all labour of all kinds of such brickwork, including labourers, making of mortar, all cutting, and all labour or work whatever, at 25s. per rod; and it can be proved that a bricklayer of the present day lays twice the number of bricks for the same value of money to what they did 100 years ago; that a brickmaker of the present day makes twice the number of bricks for the same value of money than they did 100 years ago; that the fuel with which the bricks and lime are burnt is not only much cheaper, but it is also applied with ten times the skill and effect now to what it was 100 years ago; that carriage of bricks, of lime, of sand, of scaffolding, &c., &c., is considerably less now than it was 100 years ago; that scaffolding is not only cheaper, irrespective of the duty since added, but also it is much more expeditiously and cheaply reared now than it was 100 years ago; that all other tools, implements, &c., used to produce the materials of brickwork, and the brickwork itself, including clay digging, brickmaking, stone getting, lime burning, sand getting, mortar mixing, &c., &c., are considerably cheaper now than they were 100 years ago; that lime and sand are considerably cheaper now than they were 100 years ago; that labourers of the present day do twice the quantity of work for the same amount of money than they did 100 years ago; that masters of the present day, with the exception only of master brickmakers, only get half the profits now that they got 100 years ago. Take the journeymen's labour, including bricklayers' labourers, mortar-mixers, scaffold rearing, pargetting of flues, setting of pots, bedding of bond plates, lintels, frames, cases, and all introductions into the brickwork, all cuttings, chasings, gathering over projections, recessings, sailing courses, brick on edge, rough arching, splays, brick-trimmers, and all other works, labours or requirements, belonging to the brickwork (all this is now done for 25s. per rod, while a great deal of extra labour is introduced to save brickwork by arched recesses, false windows, blank doorways, piers, &c., &c.,) at 23s. a rod; 4,500 bricks to the rod at their natural price, had not any duty been put on bricks, would be 3*l.* 7s. 6d., also 15s. 6d. for the same natural price of materials for mortar, and 20s. for masters' profits and losses, this makes six guineas the rod. I maintain, that this is the very utmost price that brickwork would have been at now, if no duty had been put on bricks; large masters would have had much more than 20s. per rod for their profits, from their having a greater demand for materials and labour, and from their being paid extra by measurement, numbers, and allowances for waste and labour, included in the 23s. to the journeyman, viz.:—pargetting of flues, setting of pots, bedding of bond, plates, lintels, frames, cases, and all introductions in the brickwork; all cuttings, chasings, gatherings, over-projections, breaks, recesses, sailing courses, brick on edge, rough arches, cut and gauged arches, drains, splays, brick trimmers, pockets, chimney breasts, and a vast many other extras, the profits of which are only known to builders, and ought not to be exposed unless builders force them out. These I have fairly calculated, but shall not expose, as I feel satisfied that every master and journeyman will admit, that I have still retained for each of them better remuneration than what they get now. I have stated things in the worst light to prevent injury to the trade by which I get my daily bread; I can prove this in various ways. It is a very erroneous opinion, that an excise duty on a home manufacture only enhances the value by the amount of duty imposed. The glass duty just taken off ought to open the eyes of the people to this foolish error; yet I admit it is one of the most difficult things I know of to follow the duty through its thousands of effects to get at the real increase in cost consequent on that duty.

I have been sixteen years constantly studying the effects of the brick duty, and not a day has passed without my attention being called to, nor has a week passed without (either on the Sunday or on the week evenings, when the fatigue of the day would permit of it) my making different calculations, checking and proving my opinions, and searching out how all was to be accounted for. Bricks only pay a duty of 6s. per 1,000, yet I can clearly prove in a number of different ways, that this duty enhances the price of bricks when in the work, and to the party ultimately and eventually paying for the brickwork, 35s. per 1000. This makes an ultimate and eventual difference in a rod of brickwork, of 7*l.* 17s. 6d. to the ultimate and eventual payer for the brickwork. This same duty makes a difference of 16s. 6d. on labour and other things that go to make up a rod of brickwork, by lessening their consumption, improvements in their productions, &c., to the ultimate eventual payer of the brickwork.

Extra final charge for bricks caused by duty	£7	17	6
Extra final charge for labour and other things caused by duty	0	16	6
Natural price of brickwork if no duty had been	6	6	0
Present unnatural price caused by duty	15	0	0

My calculations, producing these results in many different ways, are very prolix and tedious, and such as very few would go into. I have made several communications to you on the subject. If I were to attempt to hint at all the ways in which the duty affects the price, I should not hope to benefit you without being present with my papers. The principal harm done by the duty is placing those that make bricks under the excise laws, so that without any known fault or error, the maker may be exchequered, his business stopped for an unlimited time, immense expenses brought on him,—total ruin, if not immensely rich. This confines the trade in a very few hands. It also prevents any but the richest persons embarking in it; for it is known when the duty money must be paid, and any one that must sell to pay the duty is compelled to make very great sacrifices, or, to save themselves a part of this great sacrifice, they sell to the rich makers: thus an awful monopoly of brickmakers exists. Then the duty being payable immediately the clay leaves the moulds, prevents the making going on except in the very finest weather, prevents it being a continuous trade or business, causes the pay to be greater for making, prevents improvements being introduced, as any failure is the loss of duty. I will not go further in mentioning the effects of the duty, the bare writing them down to give a just idea of them would swell my communication to many postages. I have made 3,000,000 of bricks, and paid great attention to the subject, and I can convince any reasonable person that I have most undeniable evidence to substantiate all that I assert. I believe this foolish tax was put on to prevent persons (having leases of ground that did not forbid the making of bricks) from the making of bricks. It was a selfish legislative movement of landlords to commit a legal robbery on their tenants. In this they were greatly assisted, as Peter Pindar tells us, by a brickmaker making bricks near the residence of Geo. III. I remember laughing at the account when a boy, but not having Peter Pindar's works by me, I should not perhaps give the account correctly, after thirty years of hard fighting for a bare living since I read it. This duty has since been principally maintained to enable a few master-brickmakers to make rapid and large fortunes, by keeping the making in a few hands, instead of as it used to be, when every farmer and owner of land made bricks when short of other work for their labourers, when they used to cart them to the nearest town at the slack time; when farmers chiefly depended on such brickmaking as the only means of enabling them to manure properly their farms, exchanging one load of clay, manufactured into bricks, for twenty loads of manure; for I know that Government proposed to do away with this duty, as it hardly paid for its collection, and the maintenance of excisemen always on the spot; but the large brickmakers petitioned Government to continue the duty, and made a wilful mis-statement to induce the continuance of it.

Only calculate the immense injury this tax causes to the proper housing of the poor, the building of sewers, drains, railroads, churches, chapels, public buildings, bridges, &c. The preventing of fires where houses join each other, &c., and how it lessens the labour of not only bricklayers and labourers, but also of plasterers, masons, slaters, carpenters, joiners, cabinet-makers, upholsterers, smiths, plumbers, painters, glaziers, paper-hangers, surveyors, architects, and all their clerks and attendants, and many thousands of others depending on building for their means of living, and how it prevents additional accumulation of the most permanent and the most desirable part of the wealth of nations, viz., dwelling-houses, churches, public buildings, sewers, drains, bridges, and other works that will endure for centuries.

Humanitas.

THE STRIKE.

A LARGE meeting of master builders has been held at Newton. The towns of Manchester, Liverpool, Birmingham, Macclesfield, Ashton-under-Lyne, Leeds, Bolton, Preston, Wigan, Warrington, Blackburn, Stockport, Birkenhead, Sheffield, Bury, Oldham, Bradford, and various other places of minor note, had appointed deputations from the body of master builders in the various localities, and numbered nearly 200. The deputations met in the great hall, and Mr. David Bellhouse, of Manchester, was unanimously called to preside. The representatives of almost all the large building firms, in the various towns which we have enumerated, were present, and the utmost determination was shewn not to yield to the demands of the union.

The *Liverpool Mail* says, "After the meeting had broken up a letter was received, signed by several persons, on behalf of the bricklayers, joiners, and plasterers, of Liverpool, and the joiners of Manchester, and it was referred to the committee. It is probable, from the firm and decided tone of the whole proceedings, that the struggle, instead of being near its termination, is only commencing on an extensive scale, and that either the General National Union of the building trades must be dissolved, or the building trade itself throughout Lancashire, Yorkshire, and Warwickshire, will be generally suspended. This is an event much to be deplored, and we think that the operatives would do well to dissolve their connections with any general and national organization for trade purposes, as we understand that there is not much disinclination on the part of the masters to agree to local associations of workmen, which do not attempt to coerce the employers, or to interfere with their freedom to employ men who are non-unionists."

Correspondence.

MODERN LEVELLERS.

SIR,—Being a competent surveyor and leveller (brought up as a civil engineer), I beg to contradict a statement which I observed in the *Times* some time past, evidently emanating from the mouth of a would-be leveller, who did not know any thing of his presumed profession. This leveller says:—That any man who is not an idiot, could learn the art of taking levels for a railway in ten minutes by a book. More than that, we frequently see advertisements in the daily papers to the effect, that gentlemen will be made competent in the arts of surveying and levelling in a week, for a very small stipend, sometimes for three guineas. One of these advertising surveyors (a Mr. Edwards, of Bouverie-street), who engaged to make gentlemen competent for five guineas, when he had got the money from about a dozen scholars, went off to America.

Sir, for a gentlemen to be perfect in surveying, fit for practising on a line of railway, he should be well acquainted with chain-surveying and use of theodolite; taking the breadth of rivers, height of buildings, angles on inclined planes, class of all houses that may be required to be taken down, and the computing of areas. And in levelling, one ought to be able to make up one's field-book, and to plot (many surveyors I have seen unable to do either), and to take curves, and to give gradients.

It is my opinion, that many of the lines that were sent out on account of non-compliance with standing orders, &c., failed solely on account of the inefficient surveyors and levellers employed on them. I have frequently seen surveyors, when met by a river, send a man with one end of a rope over the first bridge (perhaps half a mile off), and measure the width in that way. A leveller, I myself employed, did not know what was meant by plotting!

Hoping the above will prove a warning to some of the readers of your entertaining journal, not to be taken in by advertisements promising to make them, for six guineas, competent to earn from ten to thirty guineas per week during the ensuing session,

I am, Sir, &c., VERITAS.
Chelsea, 8th May, 1846.

NEW PADDINGTON HOSPITAL.

SIR,—I have waited in the expectation that some reply would be given through your journal, to the question respecting this intended building, which you were so good as to insert in the 167th number of THE BUILDER. I cannot but think that the paragraph in question, being now of nearly a month's date, must have come under the notice of parties able, if willing, to give, let us hope, *satisfactory* information on the subject. Every thing remains in statu quo on the site, designated on a notice board as that intended for the hospital—the solitary block of granite, called the foundation stone, and the foundation walls included. Pray refer to your journal for 1845, pages 299, 304, and 321, and say, whether with so much honorary assistance engaged (as therein mentioned) in this urgent cause of charity, and the requisite funds having been subscribed, the present appearance of the works does not seem to illustrate a well-known adage.

SCULPTURE FOR THE PEDIMENT OF THE SOUTH FRONT, BRITISH MUSEUM.

THE professor of architecture at the Royal Academy having devoted his well-known talents to the improving the façade of the Liverpool Hall and Courts of Law, by designing and exhibiting this year the drawings for the sculpture for the pediment of that building, what hinders, I would ask, like assistance being afforded to the pediment of our national museum? The *frame* will soon be completed, but the *picture* ——. Perhaps you can inform your readers whether such sculpture has not always been contemplated; I fancy that it has: *chi sa?*

Would it come within the scope of the Art-Union to offer a premium to our sculptors for cartoon designs and models, that the public at large might be made sensible how far the appearance of the National Museum would be improved by the introduction of sculpture in the pediment? And supposing that an outline engraving of the most approved design should be given, as the other engravings and etchings annually are, to the subscribers, would not such a proceeding go far to prove the utility of an institution, which could bring home to every one the conviction of the necessity for the intimate connection of all the fine arts?

I am, Sir, &c. φ.
Tuesday, May 12, 1846.

Miscellanea.

VENTILATION.—At the last meeting of the Society of Arts, a communication, by Mr. A. J. Green, was read on "The Ventilation of Buildings." The paper commenced with an account of the various plans which the author had adopted for the purpose of ventilating the sick-ward and other rooms of the Sudbury Union Workhouse, and it then proceeded to point out the way in which he would propose that all large buildings about to be erected should be built. Where a double chimney is to be erected, I would propose, says Mr. Green, that two air-flues should be carried up in the stack as near the centre as they can be got. If the chimneys are not in the centre of the side or end of the room, the flues should be carried so as to bring them as nearly into that position as possible. The flues need not be more than 14 in. by 6 or 7 in., or 9 in. by 9 in., and should be commenced from the first floor, and continued through every successive story to the top of the chimney, in the same way as the flues for the smoke. One flue of the above size would be sufficient to ventilate four or five stories, if each room required it. Valves would require to be fixed in the wall or ceiling in connection with the flue. This system of ventilation, he considers, would be very applicable to smoking-rooms, tap-rooms, eating-houses, or any buildings where a large number of persons assemble.

WINDSOR CASTLE.—We are sorry to hear rumours that it is in contemplation to close the Royal apartments at the Castle to the public altogether. Should this take place, Windsor will be greatly injured.

THE NINETEENTH CENTURY.—An edict has been posted on the walls of Rome, denouncing the modern innovation of gas-light, and ordering that all private gas-works should be suppressed! Are they afraid of the light?

INSTITUTE OF FINE ARTS.—We are sorry to find that a dissension in this body is likely to interfere with its useful progress. A proposition to make the subscription two guineas instead of one, led to the appointment of a committee of inquiry by the members. This the council thought tantamount to a vote of want of confidence, and many of them resigned. It is greatly to be hoped that all parties will put aside personal feelings, and unite in maintaining a satisfactory adjustment of the differences. All must have the same interests at heart, and they should remember that the failure of the present association would render the establishment of a similar society very unlikely for a long time to come.

SURPRISING DISCOVERY.—According to all appearances, a surprising discovery in "heating apartments and buildings" has been made in Germany. It is stated, that with a merely nominal quantity of fuel, large places can be heated—the temperature raised or lowered at option, kept up for a long time, &c. The first tidings of this dicovery emanated from Baron Charles Hügel, in Vienna, a traveller of some note. But since that, other persons in Bavaria, &c., have claimed the priority of invention, and even assert to possess other and superior methods. Mr. Rothschild, the banker, has taken out a patent for this country, probably on Hügel's principle. A few days more will sift the matter and make it more adapted to be brought before our readers.

NEW CHURCH, WINCHESTER.—The church of St. John the Evangelist, at Westmeon, was on Tuesday last consecrated by the Bishop of Winchester, with the customary formalities. The new church stands on an eminence at the entrance to the village, and was built chiefly at the expense of the late Ven. Archdeacon Bayley, who was for eighteen years rector of the parish. Its style is that which prevailed in the latter half of the thirteenth century. It consists of a nave, north and south aisles, chancel, western tower, south porch and vestry, but it has no clerestory.

SUPPLY OF WATER FOR BRISTOL.—The Society of Merchant Venturers have withdrawn their Bill, the Water Works Company having agreed to pay certain expenses incurred by the former. The Water Works Company's Bill will probably pass immediately.

THE CAMBRIDGE CAMDEN SOCIETY.—At a general meeting, held on the 12th inst., the name of the society was altered to the "Ecclesiological Society, or Cambridge Camden Society," and it was determined that the annual meetings should be held in London.

NEW HOSPITAL, BIRKENHEAD.—We learn that the design chosen is that of Mr. Elmslie; the second premium is adjudged to Mr. Allom.

MEETINGS OF SCIENTIFIC BODIES

During the ensuing Week.

MONDAY, May 18.—Statistical, 12, St. James's-square, 8 P.M.; Chemical (Society of Arts, Adelphi), 8 P.M.

TUESDAY, 19.—Civil Engineers, 25, Great George-street, 8 P.M.

WEDNESDAY, 20.—Society of Arts, Adelphi, 8 P.M.; Geological, Somerset House, 8½ P.M.; British Archæological Association (Western Literary Institution, Leicester-square), 8½ P.M.

THURSDAY, 21.—Antiquaries, Somerset House, 8 P.M.; Royal Society of Literature, 4, St. Martin's-place, 4 P.M.

FRIDAY, 22.—Royal Institution, Albemarle-street, 8½ P.M.; Philological (London Library, 12, St. James's-square), anniversary, 7 P.M.

NOTICES OF CONTRACTS.

[We are compelled, by the interference of the Stamp Office, to omit the names of the parties to whom tenders, &c. are to be addressed. For the convenience of our readers, however, they are entered in a book, and may be seen on application at the office of "The Builder," 2, York-street, Covent Garden.]

For erecting a new church of St. Simon's, Baptist Mills, Bristol.

For the erection of a new chapel at Speldwick, Hants.

For the erection of a church in the parish of St. Paul, Sculcoates.

For the erection of school-rooms and a teacher's house at Bromley-common, Bromley, Kent.

For a supply of 300 tons of granite for road-making, for the parish of St. Mary Magdalen, Bermondsey.

For the digging and masonry of two tanks, dry well, and retort house, &c., for the Airdrie and Suburban Consumers' Gas Works, near Glasgow.

For building part of an extensive set of offices, near Oban.

For the erection of a church at Oban.

For the casting of from 50 to 70 tons of branches, bends, diminishing pipes, air vessels, &c., for the Dundee Water Company.

For the erection of a new church at Bradford.

For the excavation and masonry on the Lockerbie district of the Caledonian Railway.

For making and erecting a steam engine of forty-horse power, also an engine-house, &c., &c., near the banks of the River Trent, Gainsborough.

For building Sewers in Finch-lane, Nicholas-lane, and Angel-court, in the City of London.

For the cleansing and reparation of Sewers within the City of London.

For the erection of Thirty-five brick-built Cottages; 17 consisting of three rooms, 5 of four rooms, and 13 of five rooms.

COMPETITION.

The trustees of Burslem Market offer a premium of 20*l.* for the best design and plan for a new Town Hall and public offices.

The Board of Guardians of the parish of Kensington, Middlesex, are desirous of receiving plans, &c., for the erection of a workhouse capable of accommodating 400 inmates, at a cost not exceeding 9,000*l.* The architect whose plan shall be approved will be employed to erect the workhouse upon the usual per centage; if not so employed, will receive a premium of 50*l.*, and the architect second in merit will receive a premium of 20*l.*

APPROACHING SALES OF WOOD, &c.

BY AUCTION.

At the Union-house, Shipmeadow, near Bungay: upwards of 60 capital oak timber trees.

At Poslingford, near Clare: 150 good oak trees.

At the Talbot Inn, Haddlesay, near Selby: a large quantity of ash and other timber.

Upon the Waste, Rettendon, Essex: 30 ash and 45 oak well-seasoned timber trees.

At the Cock Inn, Epping: 550 capital oak trees; 50 capital ash, elm, and beech.

At Shortgrove Park, Newport, Essex: 230 timber trees.

At Mr. Davis's Farm, Hadstock, near Linton: 300 oak trees and topwood.

TO CORRESPONDENTS.

"*Development of the Cylinder.*"—In R. T.'s example, the side of the square which is constituted by the development of the cylindrical surface, is 25 feet, and the square of this is 625 feet. But he takes the diameter of the circle of conversion as 27·5 feet, which is an error. The diameter is 28·20948 feet, and the area of a circle of that diameter is 625 square feet; so that the square development and the circle of conversion are each 625 square feet; "ergo," they are equal. R. T. makes the circle of conversion 593·95875 square feet—"ergo"—he is wrong.

"*Outline Drawing.*"—J. R. N. wishes to know a better material for drawing in outline than Indian ink or sepia.

"*Compositor.*"—It is out of our province to give him the valuation he asks.

"*Mr. Emmett.*"—Thanks.

"*Rusticus.*"—Will our correspondent send us a description of the roof?

"*J. Leedham.*"—Write to the works, "Limehouse."

"*W. L.*"—The Academy Exhibition will be open all June.

"*T. H.*" (Leighton Buzzard).—Apply to Holtzapffel, Charing Cross.

"*An Early Subscriber.*"—The Essay on Brick is not published.

"*R. C. D.*"—The rooms of the Institute are at 16, Lower Grosvenor-street, Grosvenor-square.

"*Kilns.*"—Our correspondent "P." will find an article on the subject of Limes, Calcination, Kilns, &c., with sections and plans of various kilns, in an article headed "Stucco," in the "Encyclopædia Metropolitana," written by Professor Donaldson.

"*T. G.*" (Bermuda.)—We are sorry that the drawing sent is scarcely suited to our pages.

"*Stained Glass Window, St. George's, Hanover Square.*"—A Correspondent, who signs himself "W. R." called upon us, some time since, to discuss the propriety or impropriety of the stained glass window in St. George's Church,—he maintaining, if we remember rightly, that it was not gothic, but perfectly fitting. Because we have not done so, he now complains of "uncourteous conduct," and is so wrong as to say that truth is not considered by us material. "W. R." must be strangely ignorant of an editor's duties if he suppose we are bound to discuss every subject that may be proposed, especially when, as in this case, there cannot be two opinions upon it. No one who looks at the window can doubt that it is gothic in character and feeling; why, then, should we make any statement to prove the fact?

Received.—"J. D. Parry," "C. W. E. P.," "S. P. W.," "A. B.," "An Admirer of the Past Architecture," "R. Wornum," "A Competitor," "J. S. A.," "Fair Play;" "A Treatise on Railway Surveying and Levelling," by John Quested (Relfe and Fletcher, Cloak-lane, 1846.)

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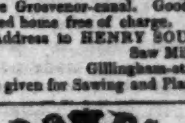

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Agent for Liverpool and Manchester, Mr. R. PART, 29, Canning-place, Liverpool.

TO ARCHITECTS, ENGINEERS, CONTRACTORS, BUILDERS, MASONS, AND PLASTERERS, MERCHANTS, SHIPPERS, AND THE PUBLIC IN GENERAL.

JOHNS and CO.'S PATENT STUCCO CEMENT.—The following are the positive advantages possessed by this Invention over every Cement hitherto introduced:—It will effectually resist Damp. It will never vegetate nor turn green, nor otherwise discolour. It will never crack, blister, nor peel off. It will form a complete Stone casing to any Building covered with it. It so closely resembles Stone that it is impossible to detect it. It never requires either to be painted or coloured. It will keep fresh and good in the cask in any Climate for any number of years. It is the only Cement that can be depended upon for export. It is the only Cement that can be used with confidence by the Sea-side. It may be used in the hottest or coldest Climates at any season. It will adhere to any substance, even to Wood, Iron, or Glass. It will carry a larger Proportion of Sand than any other Cement. It matures by age, and becomes perfect when other Cements begin to perish. It may be worked through the Winter, as frost has no effect upon it. It may be used on the Inner Walls of new Houses, which may be papered over or painted directly. Roofs laid or pointed with this Cement will remain undamaged by the severest Storms. Any Plasterer may apply it, the Instructions for use being very clear and distinct. The first cost of this material does not exceed that of the cheapest Cement now in use; but with all the above-named extraordinary and valuable advantages, nothing can approach it in point of economy.

Architects and Builders who have used this Cement have declared that it requires only to be known, to be universally preferred.

Specimens may be seen, and a Prospectus fully describing the Cement and its mode of application, together with a volume of Testimonials from every part of the Kingdom, may be obtained on application at the office of "The Builder," and of MANN and CO., SOLE AGENTS for the Patentees, 5, Maiden-lane, Queen-street, Cheapside, London: of whom also may be had,

JOHNS and CO.'S PATENT STONE-COLOUR STUCCO PAINT, expressly intended for Painting over exterior Walls of Houses that have been covered with Roman or other Cements, and which have become dirty and discoloured. It is in every way better suited for this purpose than White Lead Paint, which will frequently come off in flakes, being in direct chemical opposition with Cement; whereas MESSRS. JOHNS and CO.'S PATENT PAINT having an affinity for Stucco, binds itself with it, stopping the suction, thereby rendering the wall proof against weather, and in the finish producing a pure stone-like effect, producable by no other Paint whatever. It is cheap in its application,—and may be used by any Painter, in any climate, even in the most exposed Marine situations.

CAEN STONE.

LUARD and BEEDHAM have a quantity of the above stone, of the best quality, direct from their Quarries at Allemange, which may be inspected at the Norway Sufferance Wharf, Greenwich.—Further particulars at Mr. G. GATES', 18, SOUTHWARK-SQUARE, SOUTHWARK.

PIMLICO MARBLE AND STONE WORKS, BELGRAVE WHARF, PIMLICO-ROAD.

SAMUEL CUNDY begs to inform Architects, &c., that every description of Stone, Marble, and Granite work is executed at the cheapest possible rate.

Estimates given for Mason's Work in all its branches. Gothic Work, Tombs, Monuments, &c.

MARBLE WORK for Halls, Dairies, Tables, Columns, Vases, at most reasonable prices.

A large collection of Designs for Mural and other Monuments.

CHIMNEY PIECES from Twelve Shillings upwards.

Depôt for CAEN STONE, &c.

MARBLE CHIMNEY PIECES.—The WESTMINSTER MARBLE COMPANY have this spring, restocked their show-rooms with a great variety of chimney-pieces of quite a new design, with the best quality of Italian Marbles selected expressly for their works, and will be sold to builders at such reduced prices that they will realize a great saving by forwarding their orders to this Establishment. An unabated zeal will be maintained to continue the patronage so liberally shown to the Westminster Marble Works.—Address, Earl-street, Millbank, late Grundy's Works.

PORTER'S CORRUGATED, and PATENT GALVANIZED IRON ROOFING WORKS, Southwark-bridge (and the Grove), Southwark. At the above Works, the Public are secure in having the superior make, and by the Patent process of Galvanizing Iron as first introduced into this Country, with many improvements in its application to Roofs, Buildings, &c. Every description of Building, Railway, and other Iron and Smith's work Manufactured of the best quality. Iron Fence and Hurdles as usual.—The Trade Supplied.

MOREWOOD AND ROGERS' PATENT GALVANIZED TINNED IRON.

T. W. BEALE begs to acquaint the public that he is prepared to lay roofing, plain or corrugated, fix pipes, gutters, &c. Also chimney-tops and ventilating cowls of every description; also water and oil cisterns, of this incorrodible and fireproof metal. He manufactures all kinds of baths, as hip, shower, Roman, open, slipper, sponging, foot, children's, and self-heating baths; also toilet-cans and pails, slop-pails, coal-scuttles, cash and deed-boxes, and fire-proof safes of every description, 10 per cent. cheaper than any house in London.

The PATENT GALVANIZED TINNED IRON is applicable to the following uses:—The Lining of Ships' Store Rooms, Ships' Water Buckets, Water Jugs and Receivers, and for almost every purpose to which zinc, tin, copper, brass, or any other metal is now applied; is more durable, and manufactured at much less expense. An experienced workman sent to any part of the kingdom. All orders punctually attended to. For particulars, apply to T. W. BEALE, 46, Bridge House-place, Newington Causeway.

PATENT GALVANISED TINNED IRON.
(MOREWOOD AND ROGERS' PROCESS.)

ARCHITECTS, SURVEYORS, BUILDERS, and CONTRACTORS are respectfully informed they can be supplied with this invaluable metal for building purposes, of the best quality and lowest terms. It is superior in every respect to zinc, and two-thirds less price than 7lb. sheet lead for roofing, no woodwork being required, but iron rafters only, 21 inches apart, rendering the whole roof fire-proof. This mode of covering roofs is cheaper than Lead, Zinc, Tiles, or Slates. Parapet and other Gutters formed and fixed, also rain-water pipe, heads, eave gutter, baths, stove and funnel pipe, cisterns and water-closets fixed. The sheets are 6 feet long by 2 ft., 2 ft. 6 in. and 3 feet wide, and 9oz. to any required weight per foot, and can be had either plain or corrugated.

Please apply to CHARLES GELL, Junior, No. 5, Quick-set-row, New-road, St. Pancras, where references and testimonials of the highest respectability of extensive works already done can be had.

PAVING, 2s. 9d. PER SQUARE YARD Basements, Foot walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of pavement laid down at the above low price, and the work guaranteed.—Apply to JOHN PILKINGTON, POLONCEAU'S BITUMEN PAVEMENT OFFICE, 15, WHARF-ROAD, CITY-ROAD.—N.B. Country Agents and Railway Engineers and Contractors supplied with the best bitumen at 27s. 6d. per ton.

TO ARCHITECTS.

IN consequence of many complaints having been made to the Company, by Architects, of a spurious material having been used in the execution of Works where the SEYSSEL ASPHALTE had been specified for, the Directors, with a view to ensure the fulfilment of any such specification, have authorised CERTIFICATES to be granted to Builders where the

SEYSSEL ASPHALTE

has been used. For the purpose of securing the use of the Genuine Article, Architects and others are recommended to insert in their specifications the "Seyssel Alphalte, Claridge's Patent," and not merely "Asphalte," or "Bitumen," as in many cases where these terms have been used, gas-tar and other worthless and offensive compositions have been introduced.

I. FARRELL, Secretary.
Stangate, near Westminster Bridge, Jan., 1845. Seyssel Asphalte Company.

Books of Instructions for Use may be had at the Office of "The Builder," and of all Booksellers in Town and Country, price 1s.

*** In proof of the necessity of the above advertisement, it may be mentioned, that it has come to the knowledge of the Directors, that in certain works which have been executed by Messrs. CURTIS, builders, of Stratford, a spurious material has been used by them, contrary to the specifications, which expressly mentioned, that "Claridge's Asphalte" was to be used.

Also in the case of a work at Lewisham executed by Messrs. ROBERT and DANIEL YOUNG, of 10, Crown-row, Walworth-road, where Seyssel Asphalte was specified for, a spurious article was nevertheless laid down by them.

ENCAUSTIC, VENETIAN, and other PATENT TILES and MOSAIC PAVEMENTS may be purchased at MINTON and Co.'s warehouse, 9, Albion-place, Surrey side of Blackfriars-bridge.—Wyatt, Parker, and Co., Agents. The above tiles have lately been considerably reduced in price.

N.B. An assortment of plain and ornamental door furniture, slabs, and tiles for fire-places, &c.

ORNAMENTAL TILES FOR COVERING BUILDINGS.

ROBERT BROWNE'S newly-invented CURVED ITALIAN TILES, for which invention the Society of Arts and Sciences awarded a medal. The Gothic Grooved Ridge Tile, with vertical ornaments, invented by R. B. in 1840; also a variety of plain Gothic Ridge Tiles adapted for tile or slate coverings; ornamental Plain Tiles of various patterns.

Tiles form in winter a warmer and in summer a cooler covering than slates or metal, and may be burnt of any desired colour. Address ROBERT BROWN, Tile Works, Surbiton Hill, near Kingston, Surrey.

DAVEY'S PATENT SLATE RIDGES and HIPS are very superior in appearance to lead, as well as more durable and much cheaper, and are admitted to be the most valuable articles for the purpose hitherto invented. They consist of two side pieces and a roll, either united together to form one solid piece, or in separate parts, and in lengths of from four to six feet. The roll is made of various sizes, perfectly round, and in the strongest way of the slate. They may be purchased of the patentee, W. DAVEY, Broad Quay, Bath, or of any slate dealer in London or the country. Parties ordering a cargo of roofing slates may procure these ridges at the cheapest rate from Mr. JAMES WYATT, Port Penrhyn, Bangor (where they are manufactured), of whom and of the patentee further particulars and prices may be obtained.—Be particular to order DAVEY'S Patent.

HIP TILES to suit slate roofs in colour; Ridges, with plain or rebated joints, roll tops, and vertical ornaments; drains, many sizes, with plain or socket joints; paving in squares, hexagons, octagons, &c., different colours; roofing, in Grecian or Italian styles, other devices also, or plain; conduits, which do not injure pure water; fire-bricks and tiles; clinkers, and out-door paving; sundry wall-coping, garden-borders, chimney-tops; also tubular and other flues of peculiar material. No agent, but a depôt at 22, WHITEFRIARS-STREET, FLEET-STREET, LONDON, under Mr. PEAKE'S personal care, to supply genuine TERRO-METALLIC goods at fair prices as per quality; also, additional Stock at No. 4 Wharf, Macclesfield-street, South, City Basin.

The TILERIES, TUNSTALL, STAFFORDSHIRE, are near the centre of England, whence boats are sent direct to any inland place; or to the Mersey for the coasts, the colonies, and elsewhere.

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W. WARD, Honduras Wharf, Bank-side, and St. Michael's-alley, Cornhill, has just landed a large quantity of his very superior manufactured Fire Bricks, of Stourbridge, Welsh, and Newcastle. Prices very low. Shipments made for the East and West Indies, &c., with the greatest promptness. Gas companies, engineers, builders, and all large consumers supplied from ships in the river at a much lower price. A very large stock on hand of Bricks, Lumps, Tiles, and Clays.

River sand and gravel by freight to any wharf and dock.

BRICK MACHINE.

JONES'S PATENT MACHINE is acknowledged by old-experienced workmen to turn out far superior Bricks to what can possibly be done by hand. Expedition and cheapness guaranteed. They are moulded stiffer, put in the walls at once to dry, and will bear two high a day. So that nearly double the quantity is in process of drying, and consequently less covering required. Contracts for brick-making, by machines, entered into, and licenses granted.—Apply to EDW. JONES, Queen's Wharf, King's-road, Camden Town.

TO ARCHITECTS AND BUILDERS.

DOOR SPRINGS AND HINGES.—GERISH'S PATENT DOOR SPRINGS, for CLOSING every description of DOOR, consists of Single and DOUBLE-ACTION BUTT HINGES in Brass and Iron for Doors to open one or both ways, and Rising Hinges for the convenience of Doors opening on uneven Floors. Likewise Swing Centres, which consist of a combination of power unequalled by any made at present. Manufactured by F. W. Gerish, East-road, City-road; and sold by all respectable Ironmongers in the United Kingdom.

TO ARCHITECTS AND BUILDERS.

COLLINGE'S PATENT HINGES.—Sole Manufactory, 64, BRIDGE-ROAD, LAMBETH, where a great variety are always on view, for Church, Park, Coach-house, and all other Doors and Gates, of large or small dimensions, a gate of a ton in weight moving with these hinges as easily as a wicket; they are also admirably adapted for drawing-rooms, being highly ornamental, and folding-doors fitted with them may be removed and replaced in an instant. Rising and spring Hinges, on the most improved principle, and very superior Fastenings for exterior Gates, at moderate prices. To be seen at Charles Collinge and Co.'s Patent Axletree, Sugar-mill and Spherical-hinge Manufactory, 64, Bridge-road, Lambeth.

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"This Instrument will enable Artists and others to make any Drawing, whether from Nature or Models, in perfectly true perspective, so that a likeness or landscape may be taken in a few minutes absolutely perfect. It is used by her Majesty's Royal Sappers and Miners, Chatham. To Travellers it would be found serviceable, since it can be employed without the knowledge of drawing."—*Art Union.*

Price 18s. and 28s. Apply for Agents to BENJAMIN WEST, 2, St. James's-walk, Clerkenwell.—Sold by BARRITT and Co., 173, Fleet-street, London; GRIFFIN and Co., Glasgow, and by all Fancy Stationers, &c.